Acquisition Directorate

Research, Development, Test & Evaluation

FY14 RDT&E Project Portfolio

Table of Contents – FY14 CG RDT&E Funded

(Note: Highlighted projects indicate new starts.)

Table of Contents – FY14 CG RDT&E Funded (continued)

(Note: Highlighted projects indicate new starts.)

Table of Contents – FY14 CG RDT&E Funded
(continued)

(Note: Highlighted projects indicate new starts.)

Table of Contents – FY14 Externally Funded

(Note: Highlighted projects indicate new starts.)

Table of Contents – FY14 Additional R&D Opportunities

(Note: Highlighted projects indicate new starts.)

Acquisition Directorate

Research, Development, Test & Evaluation

FY14 Project Portfolio

CG RDT&E Funded Projects

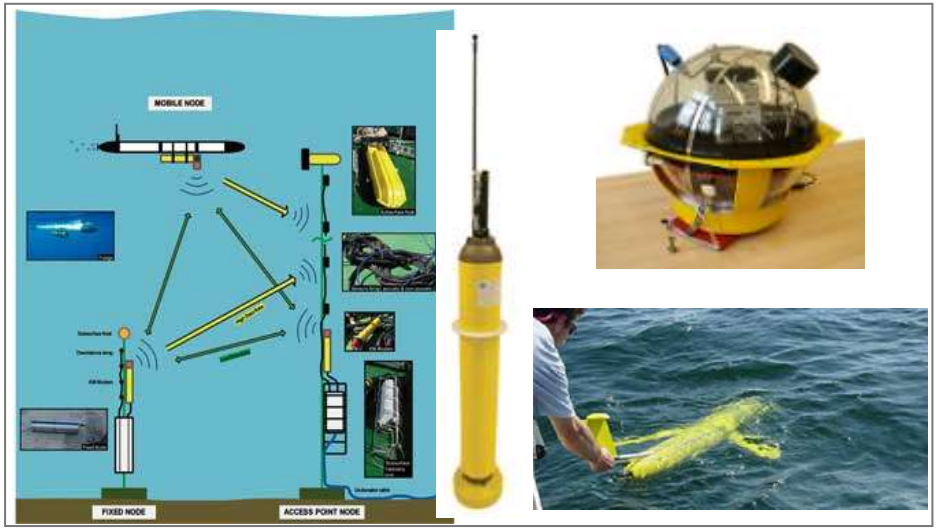
CG R&D Center

Assessment of Unmanned Maritime Vehicles for CG Missions

Mission Need: Economical, effective, persistent Maritime Domain Awareness (MDA) to support CG missions.

Project Objectives:

- Understand state-of-the-market autonomous sensors and platforms.
- Evaluate effectiveness of sensors and platforms for CG mission support.
- Model and evaluate full-scale application.
- Conduct technology demonstration.
- Prepare Rough Order of Magnitude (ROM) business case.



Key Milestone / Deliverable Schedule:

	Project Start	Oct 13
	Observe Office of Naval Research (ONR)/Naval Undersea Warfare Center (NUWC) Equipment Sea Trials	Nov 13
	Market Research Report	May 14
★	**The Applicability of Persistent Marines Sensors and Platforms to Coast Guard Missions**	**Jul 14**
	KDP Demonstration/ Phase 2 for "FY 15" Determination	Oct 14
	Technology Demonstration/ Execution of Plan	May 15
★	**Persistent Marine Sensor Demonstration Test Report**	**Jun 15**
★	**Persistent Marine Sensor Business Case Analysis**	**Jul 15**
	Project End	Oct 15

Sponsor: CG-MLE

Stakeholder(s): D1, CG-7

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-18	3	Mr. Mark VanHaverbeke (860) 271-2754	LT Derek Storolis (202) 475-3492

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Partner with ONR/NUWC.

★ Indicates RDC product.

Evaluate Risk Associated with Port/Waterway Closures

Mission Need: A methodology to evaluate the risk of port/waterway closures and the economic impacts they may cause based on their duration.

Project Objectives:

- In collaboration with the Center for Risk and Economic Assessment of Terrorism Events (CREATE) and Other Government Agencies (OGA), develop a defensible and repeatable methodology to evaluate the risk of port/waterway closures that can be applied to any port in the U.S., whether inland or coastal.
- Assess the local, regional and national economic impacts of port/waterway closures based on the duration of the shutdown.
- Recommend marine safety safeguards that can mitigate the consequences of port/waterway closures.

Key Milestone / Deliverable Schedule:

Project Start……	8 Jan 13 ✓
Status Stevens Institute Magello Product ……	8 Apr 13 ✓
Collaborate w/ CREATE & OGA……..…….…..	22 Apr 13 ✓
Document Preliminary Risk & Data Models ……...	31 May 13 ✓
Compile Project Findings…….……...	28 Jun 13 ✓
★ **Port/Waterway Closure Economic Risk Assessment Methodology……..…..**	**Mar 14**
Present Findings & Determine Next Steps …….....	May 14
Project End…….....	Jun 14

Sponsor: CG-5PW

Stakeholder(s): LANT-9, LANT-54, DHS S&T, PAC-7

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
5919	3	Mr. Warren Heerlein (860) 271-2625	LT Derek Storolis (202) 475-3492

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

RDC Staff members will coordinate closely with DHS Office of University Programs (OUP) and OGAs in this effort.

Steven's Institute will serve as lead Center of Excellence (COE).

★ Indicates RDC product.

Port Resiliency Decision Framework and Tool-kit (PRDFT)

Mission Need: Effective PRDFT for CG Sector Commanders, Captain of the Ports (COTP) and Port Authorities.

Project Objectives:

- Phase 1: In collaboration with Stevens Institute and other Center of Excellences (COE), develop an effective PRDFT.
- Phase 2: In collaboration with COEs, develop and select high priority Port Resiliency Decision Tool(s).
- Phase 3: Implement Port Resiliency Decision Tool(s), developed under Phase 2, for integration with CG enterprise systems.

Key Milestone / Deliverable Schedule:

Project Start……....	11 Jul 13 ✓
Kick Off Meeting to Define Variables……..….	3 Sep 13 ✓
Requirements, Data Sources, and Gaps.....	Dec 13
Prioritized List of Port Resiliency Variables……..…	Feb 14
KDP on Proof of Concept..…….……...	Mar 14
Develop Recommendations for PRDFT…….....	May 14
★ **Stevens Institute White Paper..…..…….. **	**Jul 14**
Project End (Phase 1)……..……...	Aug 14

Sponsor: CG-5PW

Stakeholder(s): DHS OUP, CG-FAC, LANT-7, PAC-7, CG-761

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
5920	3	Mr. Sam Cheung (860) 271-2673	LT Derek Storolis (202) 475-3492

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

DHS Office of University Programs (OUP) will provide Phase 1 funding for 3 collaborating COEs.

★ Indicates RDC product.

Port Resilience Operational/Tactical Enforcement to Counter Terrorism (PROTECT) and Other Deterrence Models

Mission Need: Operational risk-based resource allocation decision models with attributes that incorporate the value of direct contact and virtual means to deterrence and prevention.

Project Objectives:

- Develop a tool based on game theory that will randomize patrol schedules weighted towards high-valued targets that maximizes deterrence.
- Develop a tool that will measure the deterrence impact value of CG mission operations.
- Develop a modeling tool (Deterrence Impact Modeling Environment (DIME)) that provides Ports, Waterways, and Coastal Security (PWCS) planners and operators with a visually-based, performance measures driven, analytic capability.
- Leverage the previously completed security analytic research of DHS Centers of Excellence (COE), such as University of Southern California (USC) Center for Risk and Economic Assessment of Terrorism Events (CREATE) and University of Maryland (UMD) Study of Terrorism and Responses to Terrorism (START).

Key Milestone / Deliverable Schedule:

	Project Start	23 Jun 10 ✓
	Technology Transition Agreement (TTA) Signed	14 Dec 12 ✓
★	**Deterrence and the USCG: Enhancing Current Practice with Performance Measures**	**22 Mar 13 ✓**
★	**Los Angeles/ Long Beach PROTECT Analysis and Implementation Report**	**13 Jun 13 ✓**
★	**PROTECT Prototype Analytic Visual Dev Report**	**20 Sep 13 ✓**
★	**PROTECT CI/ KR Patrol Job Aid Mobile App: Evaluating a Pilot Test Performed by Sector New York**	**Dec 13**
★	**PROTECT Prototype Optimized Random Scheduler Model Development Report**	**Dec 13**
★	**DIME Pilot Test, Evaluations, and Findings Report**	**Oct 14**
	Project End	Dec 14

★ Indicates RDC product.

Sponsor: DCO-81

Stakeholder(s): LANT-73, DHS S&T, CG-MSR, CG-771, PAC-7

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
7512	1	Mr. Craig Baldwin (860) 271-2652	LT Derek Storolis (202) 475-3492

Expected Benefit:

Improved Doctrine/CONOPs/TTPs

Notes:

Partnering with 3 DHS Office of University Programs (OUP) Centers of Expertise (COE).

Develop ARMOR Fish Patrol Schedule Model

Mission Need: Improve efficiency and effectiveness of patrol scheduling in support of Living Marine Resource (LMR) missions.

Project Objectives:

- Develop Assistant for Randomized Monitoring Over Routes (ARMOR) model to improve effectiveness and efficiency of CG fishing patrols in support of LMR mission areas.
- Deliver a Final Report of the findings, results, and recommendations for future work using the ARMOR model.

Key Milestone / Deliverable Schedule:

	Project Start	1 May 13 ✓
	Baseline Prototype	Dec 13
	KDP Go/ No Go on Proof of Concept	Dec 13
	Model for Chosen CG Cutters in a District	Mar 14
	Model Constraints Application	Jun 14
	Brief Sponsor/ Viability	Jun 14
★	**Final Report of ARMOR Fish Model**	**Nov 14**
	Project End	Dec 14

Sponsor: CG-MLE

Stakeholder(s): LANT-7, PAC-7, D8, D1

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
7523	3	Mr. Sam Cheung (860) 271-2673	LT Derek Storolis (202) 475-3492

Expected Benefit:

Improve operational performance/ efficiency/ mission execution/ resilience

Notes:

Partnering with DHS Office of University Programs (OUP) Center of Expertise (COE).

★ Indicates RDC product.

Analysis in Support of Transition

Mission Need: A process to transfer a good idea or Commercial Off The Shelf (COTS) tool to CG-wide use.

Project Objectives:

- Develop a user-friendly, repeatable checklist on how to transition good ideas to the CG.
- Develop a process to identify a "Champion" for projects to support funding and transition of those projects to CG-wide implementation.

Key Milestone / Deliverable Schedule:

Project Start	11 Dec 12	✓
Identify Example Cases	20 May 13	✓
Identify Lessons Learned	25 Jul 13	✓
★ **Transition Support Roadmap**	**Feb 14**	
Project End	Mar 14	

Sponsor: CG-926

Stakeholder(s): CG-6, CG-7, CG-9, DHS S&T OUP, CG-095

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
7928	1	Ms. Kathleen Shea Kettel (860) 271-2770	LT Derek Storolis (202) 475-3492

Expected Benefit:

Inform follow-on acquisition/enterprise deployment

Notes:

Worked with the DHS Office of University Programs (OUP) to obtain example cases.

★ Indicates RDC product.

Ergonomics Analysis of Communications Centers (COMMCENs)

Mission Need: Improve COMMCEN performance through ergonomic design.

Project Objectives:

- Conduct ergonomics analysis of COMMCENs to identify issues.
- Identify constraints on solution set.
- Develop recommendations to provide improved ergonomics and COMMCEN performance.
- Test and evaluate selected recommendations.

Key Milestone / Deliverable Schedule:

	Project Start	16 Jan 13 ✓
	Initial Site Visits: Overview of Ergonomics Issues	23 Sep 13 ✓
★	**Briefing on Ergonomics Issues**	**Jan 14**
	Implement FY14 Interventions	Jul 14
	Final Testing of Interventions	Oct 14
★	**Briefing on FY14 Results**	**Jan 15**
	FY15 Study, Recommendations, and Testing	Oct 15
★	**Briefing on FY15 Results**	**Dec 15**
	Project End	Dec 15

Sponsor: CG-741

Stakeholder(s): CG-761, CG-933, D8, DOT Volpe, PAC-7

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
9364	3	Dr. Anita Rothblum (860) 271-2847	Mr. Jaurin Joseph (202) 475-3493

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Partnering with Volpe National Transportation Systems Center.

★ Indicates RDC product.

Acquisition Support & Analysis (ASA) Branch Support

Mission Need: Maintain RDC Branch competency and knowledge; provide rapid response; and provide external liaison.

Project Objectives:

- Maintain and enhance Branch competencies (Human Systems Integration, Acquisition Analysis, Cost Modeling, and Risk Analysis).
- Provide CG-9 a core competency for analysis approaches that provide more efficacy and efficiency for acquisition decision-making.
- Provide CG-095 a core competency to supplement their options for conducting strategic analysis.

Key Milestone / Deliverable Schedule:

Project Start	3 Dec 07 ✓
Strategic Project Portfolio Alignment	Nov 13
Idea Submission Review.....	Mar 14
New Project Execution Plans (PEP)/Proposals.....	As Required
Conduct Market Research.....	As Required
Technology Conferences.....	As Required
Project End	TBD

Sponsor: CG-926

Stakeholder(s): CG-095

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
9995	3	Mr. Tim Hughes (860) 271-2726	LT Derek Storolis (202) 475-3492

Expected Benefit:

Add to general R&D knowledge base

Notes:

★ Indicates RDC product.

Airborne Oil Spill Remote Sensing and Reporting

Mission Need: Tactics, Techniques, and Procedures (TTP) for optimizing the use of existing CG airborne Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) systems to support oil spill response operations.

Project Objectives:

- Baseline current CG airborne capabilities for Detecting, Mapping and Reporting (DMR) oil spills.
- Analyze results of Deepwater Horizon Response (DHR) oil spill surveillance efforts by CG Maritime Patrol Aircraft (MPA).
- Evaluate business case for a cooperative R&D project with Bureau of Safety and Environmental Enforcement (BSEE) to develop a "hybrid" oil thickness mapping capability.
- Conduct airborne oil spill DMR testing.
- Document issues in CG oil spill DMR within context of hardware, operator training and environmental conditions; then work with Aviation Training Center (ATC) Mobile to develop TTPs.

Key Milestone / Deliverable Schedule:

	Project Start…….……..……	Nov 13
	Key Decision Point to Develop Joint Project w/BSEE……....	Aug 14
	Task 1 & 2 White Paper Summary…….	Oct 14
	CG Sensor Field Evaluation…….	May 15
★	**USCG Airborne Spill Remote Sensing and Reporting…….**	**Dec 15**
	Project End…….…...	Jan 16

Sponsor: CG-MER

Stakeholder(s): CG-711, ATC Mobile, FORCECOM, PACAREA

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2012-01	3	Mr. Gary Hover (860) 271-2818	CDR Albert Antaran (202) 475-3049

Expected Benefit:

Improved Doctrine/CONOPs/TTPs

Notes:

BSEE is a potential co-sponsor should a decision be made to incorporate an oil thickness measurement element into the project.

★ Indicates RDC product.

Identify Navigation, Communications, and Detection (NC&D) Equipment for Ice Rescue Teams

Mission Need: Robust electronic equipment for Ice Operations.

Project Objectives:

- Research equipment needed to complete Ice Rescue Team (Special Purpose Watercraft (SPC) and on foot) missions, with a focus on multi-purpose, weatherproof equipment for Ice Rescue Teams.
- Document requirements and performance gaps.
- Post a Request For Information (RFI) for test products/candidates.
- Test products on ice (D-9/D-17 environment) to determine viability and to narrow, then finalize the list of potential products.

Key Milestone / Deliverable Schedule:

	Project Start	Nov 13
	Document Requirements and Identified Gaps	May 14
	Phase 1 Review, Evaluation, and Down-Selection	Aug 14
★	**Interim Brief: Lessons Learned and Preliminary Product Selections for Follow-On Testing**	**Sep 14**
	Phase 2 Field Testing	Feb 15
★	**Final Report: Lessons Learned and Final Product Recommendations for NC&D Equipment**	**Aug 15**
	Project End	Sep 15

Sponsor: CG-SAR

Stakeholder(s): CGD-9, CGD-17

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2013-13	3	Mr. Don Decker (860) 271-2701	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

★ Indicates RDC product.

Multiple-Person Recovery Techniques & Equipment Evaluation

Mission Need: Multiple person recovery system for time-critical rescues.

Project Objectives:

- Conduct a trial, evaluative demonstration to determine whether existing technology allows safe, effective, timely multiple-person retrieval/recovery from the water or other hazardous situation, by vessel and aircraft.
- Investigate and recommend ways to improve timely and safe person-in-the-water rescue to CG vessels and aircraft.

Key Milestone / Deliverable Schedule:

	Project Start……	Nov 13
	Sponsor/Stakeholder Alignment Sessions……	Dec 13
	Multiple Person Device Evaluation……..	May 14
★	**Preliminary Evaluation Report……**	**Aug 14**
	Follow-up Device and Technique Demo/Evaluation……	Nov 14
★	**Technique & Equipment Evaluation Report……..**	**Feb 15**
	Project End……..…….	Mar 15

Sponsor: CG-SAR
Stakeholder(s): CG-711, CG-731, CG-751

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-10	3	Mr. M. J. Lewandowski (860) 271-2692	Mr. Jaurin Joseph (202) 475-3493

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Will leverage significant body of prior RDC work.

★ Indicates RDC product.

Alternatives to Pyrotechnic Distress Signals

Mission Need: Improve distress signal devices.

Project Objectives:

- Determine suitability of potential alternatives to pyrotechnic visual distress signals.
- Expand knowledge of signal conspicuity and identifiability through additional literature review and analysis of nighttime maritime background environment.
- Narrow the optimal distress signal characteristics range by evaluating human-subject response to laboratory generated visual-stimuli.
- Validate laboratory findings through human-subject field test.
- Recommend optimal visual distress signal characteristics.
- Develop "position paper" with recommendations to update carriage requirements to eliminate ineffective devices.

Key Milestone / Deliverable Schedule:

	Project Start	1 Nov 10 ✓
	Functional Requirements Workshop	30 Feb 11 ✓
	Visual Comparisons and Use Testing	9 Nov 11 ✓
★	**Suitability of Potential Alternatives to Pyrotechnic Distress Signals**	**31 Jan 12 ✓**
	Laboratory Testing	Mar 14
	Field Testing	Jul 14
★	**Alternatives to Pyrotechnic Distress Signals; Laboratory and Field Studies**	**Oct 14**
	Project End	Nov 14

Sponsor: CG-ENG

Stakeholder(s): CG-SAR, CG-BSX

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
1101	3	Mr. M. J. Lewandowski (860) 271-2692	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Influence International Standards

Notes:

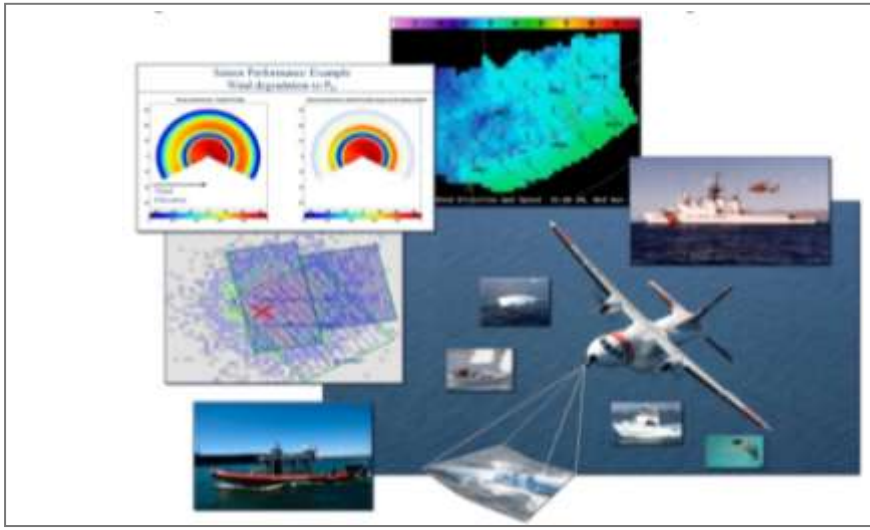
★ Indicates RDC product.

Optimizing RADAR & Electro-Optical Sensors (OREOS)

Mission Need: Provide sensor performance decision support to the operational and acquisition communities from Sensor Performance Modeling.

Project Objectives:

- Assess the design and capabilities of current CG sensor performance applications and prediction tools in order to enhance existing or develop new digital sensor, target, and environment models.
- Identify a scalable and maintainable path forward that allows for cost effective improvements for future growth.
- Build a systematic, scalable and sustainable software model to meet the mission need.



Key Milestone / Deliverable Schedule:

	Project Start	10 Mar 09 ✓
★	**Summary Report: Sensor M&S - Phase I**	**11 May 10 ✓**
★	**Briefing – Validation of RADAR/EO/IR Testing**	**23 Mar 12 ✓**
	North Atlantic Treaty Organization (NATO) Partnered Validation Test	14 Jun 12 ✓
★	**OREOS Technical Summary**	**Apr 14**
	Project End	May 14

Sponsor: CG-926

Stakeholder(s): CG-SAR, M&S COE

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
7507	1	Ms. Judith Connelly (860) 271-2643	LT Derek Storolis (202) 475-3492

Expected Benefit:

Improved doctrine CONOPS and TTPs

Notes:

This project included participation by DoD and International partners contributing to sensor performance modeling.

★ Indicates RDC product.

Vertical Take-Off and Landing (VTOL) Unmanned Aerial System (UAS) Flight Demonstration Off the National Security Cutter (NSC)

Mission Need: Expand CG research and operational experience w/UAS capabilities in a maritime environment.

Project Objectives:

- Design a roll-on/roll-off Fire Scout Ground Control Station (GCS) for use on NSC and any future CG cutter VTOL UAS demonstration.
- Execute flight deck certification, engineering and airspace processes involved in order to operate Vertical Unmanned Aerial System (VUAS) off the NSC. Install and test Fire Scout system from an NSC.
- Conduct Dynamic Interface testing to establish Fire Scout Wind Over Deck parameters and conduct Electro-Optical (EO)/Infrared (IR) and Automatic Identification System (AIS) payload testing to quantify VTOL UAS contribution to NSC mission performance.
- Conduct analysis and report on effectiveness of VUAS to contribute to NSC mission performance.

Key Milestone / Deliverable Schedule:

Project Start	1 Oct 09 ✓
Reinitiate Project	8 Feb 12 ✓
Select Candidate NSC for Test	30 Nov 12 ✓
GCS System Acceptance	Oct 14
NSC Installation and Test	Feb 15
★ **Evaluation of Fire Scout for Use on NSC**	**Jun 15**
Project End	Jul 15

Sponsor: CG-931

Stakeholder(s): CG-711, CG-751, CG-932, RNWC, PAC-7

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
7802	1	Dr. Andrew Niccolai (860) 271-2670	CDR Albert Antaran (202) 475-3049

Expected Benefit:

Inform follow-on acquisition/enterprise deployment

Notes:

Includes funding from FY10 UAS Earmark.

Includes funding from FY12 UAS Earmark.

Partner with U.S. Navy.

★ Indicates RDC product.

Shipboard Small UAS Capability Demonstration

Mission Need: Identify the risks, benefits, and limitations of operating small Unmanned Aerial System (UAS) off the National Security Cutter (NSC).

Project Objectives:

- Prepare for a sUAS installation on an NSC to include Engineering Change Proposal (ECP), Interim Flight Clearance, Topside Analysis and other prerequisites.
- Execute two shipboard Small Unmanned Aircraft System (sUAS) demonstrations from NSC and a shore based demonstration to evaluate state-of-the-market payload configurations.
  - Phase 1: Initial dedicated demonstration of sUAS capability.
  - Phase 2a: Demonstration of sUAS capability during NSC patrol.
  - Phase 2b: Shore based assessment of various sensor payloads.
- Analyze and report on potential sUAS contributions to NSC mission capabilities and impact on ship and crew operations.

Key Milestone / Deliverable Schedule:

	Project Start	27 Sep 11 ✓
	Configuration Control Board Approval	14 Apr 12 ✓
	Shore Side Test	6 May 12 ✓
	Phase I Demonstration off USCGC Stratton	18 Aug 12 ✓
★	**sUAS Interim Report and Recommendations**	**14 Nov 12** ✓
	Phase 2A Demonstration off USCGC Bertholf	31 May 13 ✓
	Phase 2B Demonstration at National Aeronautics and Space Administration (NASA) Wallops Flight Facility	Feb 14
★	**sUAS Final Report and Recommendations**	**Jul 14**
	Project End	Aug 14

Sponsor: CG-711

Stakeholder(s): CG-931, CG-751, CG-932, RNWC, PAC-7

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
7804	1	Dr. Andrew Niccolai (860) 271-2670	CDR Albert Antaran (202) 475-3049

Expected Benefit:

Inform follow-on acquisition/enterprise deployment

Notes:

Includes funding from FY10 UAS Earmark.

Partner with U.S. Navy.

★ Indicates RDC product.

Robotic Aircraft for Maritime Public Safety (RAMPS)

Mission Need: Better understanding of the risks, benefits and limitations of operating existing Commercial off the Shelf (COTS) Small Unmanned Ariel System (sUAS) technology in a maritime environment for cutter forces other than the National Security Cutter (NSC).

Project Objectives:

- Develop requirements, standards and Concept of Operations (CONOPS).
- Leverage Department of Defense (DoD) and Original Equipment Manufacturer (OEM) investments in sUAS technology.
- Evaluate realistic maritime security and first responder scenarios.
- Create a knowledge resource database.
- Guide future platform and sensor development to meet maritime first responder requirements.

Key Milestone / Deliverable Schedule:

	Project Start…….……..	Oct 13
	RAMPS Request For Information (RFI) Release……..	Mar 14
	Develop Test Plan and Cards...……..	Mar 14
	RAMPS Demo 01…..……..	May 14
	RAMPS Demo 02…..……..	Aug 14
	RAMPS Demo 03…..……..	Nov 14
	RAMPS Demo 04…..……..	Feb 15
	RAMPS Demo 05…..……..	May 15
★	**RAMPS Compilation Final Report…….**	**Oct 15**
	Debrief with DHS S&T……..	Oct 15
	Project End…….....	Nov 15

★ Indicates RDC product.

Sponsor: DHS S&T, CG-711

Stakeholder(s): CG-751, CG-771, CG-9313

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
7807	3	Dr. Andrew Niccolai (860) 271-2670	CDR Albert Antaran (202) 475-3049

Expected Benefit:

Direct Acquisition Support (MAR, MNS, CONOPS, ORD, AA, LCCE, T&E, etc)

Notes:

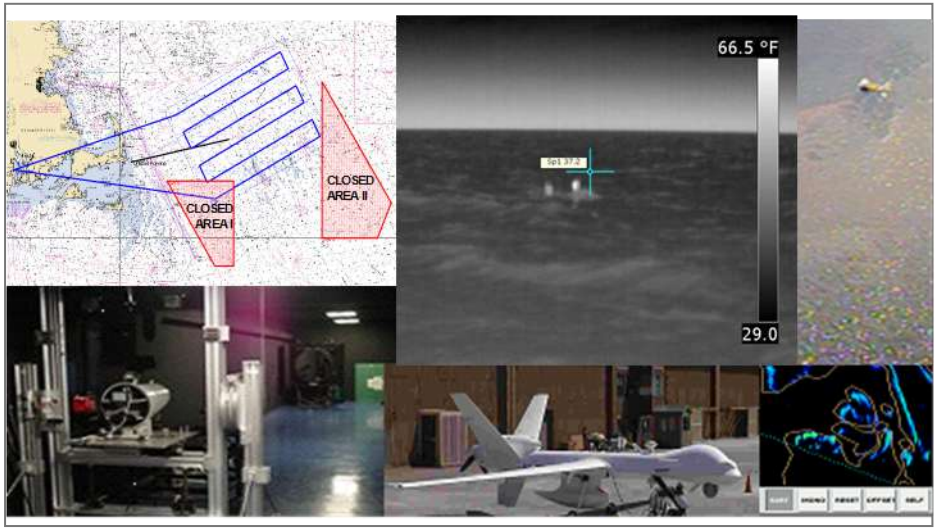
Work in partnership DHS Science and Technology (S&T) Boarders and Maritime Division (BMD).

Aviation Branch Support

Mission Need: Maintain RDC Branch competency and knowledge; provide rapid response; and provide external liaison.

Project Objectives:

- Maintain/develop Branch technical competencies and infrastructure in CG-relevant aviation/Test and Evaluation (T&E) technology.
- Support Aviation Strategic Project Portfolio Alignment (SPPA).
- Report on development & test of Thermal Oscar target.
- Report on analysis of CG airborne spill surveillance.
- Seek opportunities to support CG/DHS aviation programs that close capability gaps and improve mission performance.



Key Milestone / Deliverable Schedule:

Project Start	3 Dec 07 ✓
Strategic Project Portfolio Alignment	Nov 13
Idea Submission Review	Mar 14
New Project Execution Plans (PEP)/Proposals	As Required
Conduct Market Research	As Required
Technology Conferences	As Required
Project End	TBD

Sponsor: CG-926
Stakeholder(s): CG-711

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
9992	3	Mr. William Posage (860) 271-2688	CDR Albert Antaran (202) 475-3049

Expected Benefit:

Add to general R&D knowledge base

Notes:

★ Indicates RDC product.

Monitoring of Water-side Wireless Access Points (WAP) for Port Critical Infrastructure/Key Resource (CI/KR) Protection

Mission Need: Effectively monitor and characterize WAP vulnerabilities and threats within our maritime port facilities.

Project Objectives:

- Investigate and document cyber-based vulnerabilities of, and threats to, WAP-enabled CI/KR within our maritime port facilities.
- Conduct market research to identify technologies that could provide a DHS/CG Sector-based WAP monitoring capability and obtain one or more prototype demonstration systems.
- Establish a re-configurable maritime WAP test bed.
- Demonstrate one or more prototype systems in the test bed and then at representative port facilities.
- Prepare technical report and briefing that summarizes project activities, data, findings and recommendations to support a Business Case for the acquisition, implementation, operation, and maintenance of a maritime WAP monitoring capability.

Key Milestone / Deliverable Schedule:

	Project Start	Jan 14
★	**Maritime Port Threat Analysis Report**	**Dec 14**
	Key Decision Point to Use Other Government Agency (OGA) Facility or Establish Organic Test Bed	Jan 15
★	**Market Research Memorandum Report**	**Mar 15**
★	**WAP Vulnerability Assessment Report and Brief**	**Oct 16**
	Project End	Nov 16

Sponsor: DHS S&T*

Stakeholder(s): CG-761, CG-6, CG-CYBERCOM

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2013-58	3	Mr. Jay Spalding (860) 271-268	CDR Tung Ly (202) 475-3011

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

*Funding from DHS Science and Technology (S&T) Directorate being solicited via CG CYBERCOM and CG-5.

★ Indicates RDC product.

Maritime Smartphone Public Safety Answering Point (PSAP) Forwarding for CG-SAR

Mission Need: An E-911 voice/image/text call forwarding capability into CG-SAR Command and Control (C2).

Project Objectives:

- Identify alternative solutions and Rescue 21 (R21) system infrastructure access portals that allow state-of-the-market CG-SAR/Joint Response Command Center (JRCC) data streams.
- Design an extensible E-911 access portal to transfer required CG application data streams {E-911-NG/PSAP, CG-SAR, AIS…}.
- Demonstrate transfer of non-R21 data via R21 and other telecom linkages into CG-COMMs for CG-SAR command and control.
- Prepare Research and Analysis Report and Annotated Briefing.

Key Milestone / Deliverable Schedule:

	Project Start	Nov 13
★	**Briefing and Key Decision Point**	Dec 13
	Develop & Execute CRADA w/General Dynamics	Jan 14
	Technical Demonstration ALPHA	Jun 14
	Tech Demo ALPHA Review Results	May 14
	Technical Demonstration BETA	Oct 14
★	**Maritime Distress to CG-SAR Report (w/annotated Briefing)**	**Nov 14**
	Project End	Dec 14

Sponsor: CG-625

Stakeholder(s): CG-SAR, CG-741, CAMS-LANT, CG-R21, CG-761

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-2	3	Ms. Val Arris (860) 271-2849	CDR Tung Ly (202) 475-3011

Expected Benefit:

Improve CG-SAR locating/efficiency/mission/resiliency

Notes:

Cooperative Research and Development Agreement (CRADA) will be used.

★ Indicates RDC product.

Solid State Radar Applications to CG Operations

Mission Need: Intelligence and operational information on new technology radars.

Project Objectives:

- Obtain objective data regarding the performance of new solid state technology radars against targets of CG interest, including a side-by-side comparison with current CG surface search radars.
- Pre-acquisition guidance for the CG on the appropriate application of new technology radar considering current system end of life issues and including cost-benefit analysis.

Key Milestone / Deliverable Schedule:

	Project Start	Oct 13
	Identify Key Performance Points	Jan 14
	Coordinate Testing Locations	Feb 14
	Identify Radars to be Tested	Feb 14
	Develop Test Plan	Mar 14
	Conduct Underway Testing	Jul 14
	Conduct Shoreside Testing	Sep 14
★	**Solid-State Radar Applications to CG Operations**	**Feb 15**
	Project End	Mar 15

Sponsor: CG-761

Stakeholder(s): CG-257, C3CEN, CG-64, CG-933

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-9	3	LT Jeffrey Young (860) 271-2679	CDR Tung Ly (202) 475-3011

Expected Benefit:

Inform follow-on acquisition/enterprise deployment

Notes:

Collaboration and technical exchange with: USN NAVSEA test vessel USS Stilletto.

Follow-on to completed Project 8106.

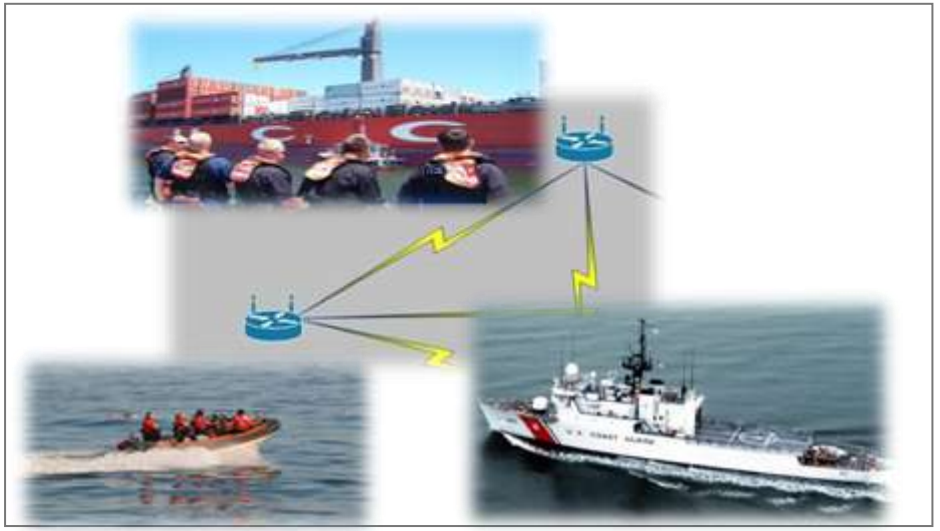
★ Indicates RDC product.

Tactical Comms Network (TCN) to Enhance Boarding Operations

Mission Need: Rapidly communicate operational data and media from boarding team to parent cutter or shore unit.

Project Objectives:

- Review and assess the current state of deployable boarding team WIFI communications technology – Commercial Off The Shelf (COTS)/Government Off The Shelf (GOTS).
  - Identify options to enhance shorter-duration vessel inspections.
- Design a preliminary concept and scalable network architecture to meet user-required performance parameters.
- Conduct preliminary demonstration of select technologies.
- Prepare Research and Analysis Report and Annotated Briefing.



Key Milestone / Deliverable Schedule:

	Project Start……....	Nov 13
	Technology Transfer Agreement (TTA).....	Jan 14
	Market Research/Alternatives Analysis (AA) – Intra-Boarding Team (BT) Relay…….....	Mar 14
	Market Research/AA – Network BT to Parent Unit…….....	Apr 14
★	**Integrated TCN Architecture Briefing…….....**	**Jul 14**
	Interim Authority to Test (IATT)….....	Oct 14
	Technical Demonstration Plan.....	Oct 14
	Technical Demonstration ……..……..……..	Nov 14
★	**TCN to Enhance Boarding Operations Report ……...**	**Mar 15**
	Project End……..……..	May 15

Sponsor: CG-761

Stakeholder(s): AREA Ops & District (re); C3CEN

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-25	3	Mr. Wayne Buchanan (860) 271-2759	CDR Tung Ly (202) 475-3011

Expected Benefit:

Improve Operational Performance/Efficiency/Mission Execution/Resiliency

Notes:

Updates work from prior RDC projects: *Boarding Team Comms Product Development Evaluation (5671)* and *Secure Tactical Connectivity (5672).*
Coordination with DTRA; "Vessel Boarding Inspection System;" and possible coordination with Naval Post Graduate School's (NPS) Maritime Interdiction test bed.

★ Indicates RDC product.

Non-Compliant Vessel (NCV) Video Recorder

Mission Need: CG Over The Horizon (OTH) platforms ability to capture video imagery of operations or surroundings.

Project Objectives:

- Evaluate a range of technical capabilities a video system can provide in support of OTH operations and missions.
- Support and validate operational requirements and Key Performance Parameters (KPP).
- Collect quantitative data points that can be used to determine the range of technical performance for various systems.

Key Milestone / Deliverable Schedule:

	Project Start	20 Oct 11 ✓
★	**NCV Video Recorder: Technology Options Brief**	**20 Jun 12** ✓
	Initial Evaluation	16 Dec 12 ✓
	Extended Evaluation	30 Jul 13 ✓
	Technology Transition Agreement (TTA) Approval	Oct 13
★	**NCV Video Recorder: Final Report**	**Oct 13**
	Project End	Dec 13

Sponsor: CG-761

Stakeholder(s): CG-731, LANT-7

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
5704	3	LT Kevin Sorrell (860) 271-2727	CDR Tung Ly (202) 475-3011

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Follow-on to Project 5110.

★ Indicates RDC product.

Non-Compliant Vessel (NCV) Contraband & Vessel Marker

Mission Need: Method to effectively tag and track jettisoned contraband (for later recovery) and abandoned vessels.

Project Objectives:

- Evaluate a range contraband marker systems to support Over The Horizon (OTH) Law Enforcement (LE) activities and boat marking systems for adrift and abandoned boats.
- Collect quantitative data points that can be used to determine the range of technical performance for various systems.
- Generate, support, and validate operational requirements and Key Performance Parameters (KPP) for a potential future acquisition.

Key Milestone / Deliverable Schedule:

	Project Start Phase I	20 Oct 11 ✓
★	**NCV Contraband Marker: Technology Selection Briefing**	**12 Jan 13 ✓**
	Initial Evaluation	Dec 13
	Extended Evaluation	May 14
	Technology Transition Agreement (TTA)	Jul 14
★	**NCV Contraband Marker: Final Report**	**Sep 14**
	Project Start Phase II	Oct 13
★	**Vessel Tracking: Technology Selection Briefing**	**Mar 15**
	Develop & Test Abandoned Vessel Tracking	Sep 15
★	**Abandoned Vessel Tracking: Final Report**	**May 16**
	Project End Phase 2	Jul 16

★ Indicates RDC product.

Sponsor: CG-761

Stakeholder(s): LANT-7, CG-731

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
5707	3	LT Kevin Sorrell (860) 271-2727	CDR Tung Ly (202) 475-3011

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

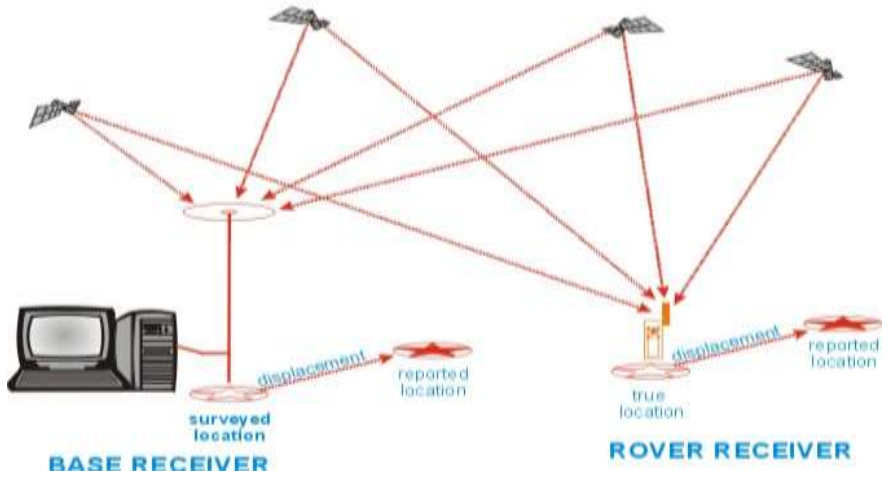
Notes:

Alternative Precise Network Timing

Mission Need: A precise timing alternative in the event Global Positioning System (GPS) becomes unavailable.

Project Objectives:

- Research, evaluate, and document at least one promising wireless technical approach for passing precise time using LORAN and dGPS frequencies. Make a recommendation for a backup timing system to GPS.
- Using data gathered during UrsaNav testing, develop a comprehensive report on the benefits and feasibility of using LORAN as a timing backup to GPS.



Key Milestone / Deliverable Schedule:

Project Start ……	5 Dec 11 ✓
Statement of Obligation for CRADA …….....	9 Feb 12 ✓
CRADA Signed by Both RDC and UrsaNav ..……	6 Jun 12 ✓
Testing at LORAN Station Wildwood, NJ …..……..	12 Apr 13 ✓
Testing at LORAN Station Las Cruces, NM ……..	22 Jul 13 ✓
★ **Results of Alternative to GPS Timing Tech…….. **	**Mar 14**
Briefing of Alternative to GPS Timing Tech to HQ …….	Apr 14
Project End ……...	May14

Sponsor: CG-5PW
Stakeholder(s): CG-6

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
6206	3	LT Mike Grochowski (860) 271-2816	CDR Tung Ly (202) 475-3011

Expected Benefit:

Add to general R&D knowledge base

Notes:

Project includes use of a Cooperative Research and Development Agreement (CRADA).

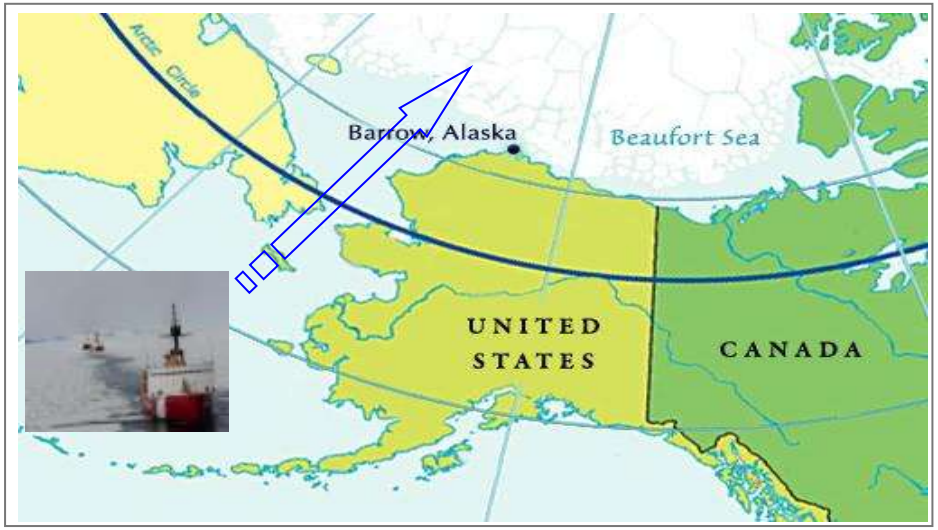
★ Indicates RDC product.

Arctic Communications Technology Assessments

Mission Need: Increased communications capability in the Arctic to improve performance.

Project Objectives:

- Survey, evaluate, and document the capabilities of existing CG and non-CG maritime Arctic comms technologies.
- Assess Emergency Communications Capabilities in the Arctic for Mariners.
- Develop and demonstrate the feasibility of connecting shipboard mobile Automatic Identification System (AIS) transponders on Class A vessels to existing Iridium satellite links, to include an initial system architecture for extended ranges.
- Observe High Frequency (HF) and satellite coverage in the Arctic Region and compare with modeled coverage.
- Provide initial Life Cycle (technical and cost) information to support implementation decisions.



Key Milestone / Deliverable Schedule:

	Project Start……..	1 Oct 12 ✓
★	**Arctic Coverage and Average Expected Coverage…….. **	**16 Aug 13** ✓
★	**As-Is vs. Alternative System Performance…… **	**Nov 13**
★	**Modeling of Emergency Frequencies in the Arctic……. **	**Dec 13**
	Develop & Demonstrate Feasibility of Shipboard Mobile AIS Transponders on Class A Vessels with Test Plan Decision Point……..	Mar 14
	Test All COMMs Coverage in the Arctic Including Use of HF, AIS, and Emergency COMMs……...	Sep 14
★	**Arctic Communications Technology Recommendations and Path Forward……..…… **	**Feb 15**
	Project End……..….....	Feb 15

Sponsor: CG-761

Stakeholder(s): CG-6, C3CEN, DHS S&T, R21, Alaska Marine Ex, PACAREA

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
6208	3	Ms. Elizabeth Weaver (860) 271-2732	CDR Tung Ly (202) 475-3011

Expected Benefit:

Improve operational performance/efficiency/mission execution/ resiliency

Notes:

Execution in conjunction with Project 6210.

★ Indicates RDC product.

Alternative Asset Iceberg Reconnaissance Demonstration

Mission Need: Determine if the International Ice Patrol (IIP) mission can be accomplished by using alternatives.

Project Objectives:

- Conduct a comparison of iceberg surveillance and detection using alternative assets that will establish baseline performance.
- Review the algorithms used to process the data from existing assets and compare the results to processed data from alternative assets. This will aid in optimization for improved surveillance and detection capabilities.
- Upon completing the first two objectives, a side-by-side comparison of iceberg limit modeling will be done. This will aid in determining the effectiveness of alternative assets conducting iceberg surveillance and modeling.

Key Milestone / Deliverable Schedule:

Project Start	22 Mar 13 ✓
Identify Demonstration Criteria	1 May 13 ✓
Perform Ground Truth	1 Aug 13 ✓
★ **Annotated Brief: Alternative Asset Iceberg Reconnaissance Demonstration (Key Decision Point)**	**Nov 13**
Simultaneous Iceberg Modeling	Aug 14
★ **Technical Report: Alternative Asset Iceberg Reconnaissance Demonstration**	**Feb 15**
Project End	Mar 15

Sponsor: CG-WWM

Stakeholder(s): CG-IIP, CG-257

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
6502	3	LT Jeffrey Young (860) 271-2679	CDR Tung Ly (202) 475-3011

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

★ Indicates RDC product.

Mobile Asset Tracking and Reporting During an IONS

Mission Need: A flexible ad hoc interoperable communication/information system to enhance the Coast Guard's ability to respond to Incidents of National Significance (IONS).

Project Objectives:

- Prototype a flexible interoperable communication/information system, processes, and procedures to enhance the CG's ability to transfer information that will assist personnel responding to an IONS (e.g., oil spill).
- The system, processes, and procedures should make use of the equipment the responders are expected to bring to the incident such as smartphones, tablet computers, and laptops.

Key Milestone / Deliverable Schedule:

	Project Start	19 Aug 11 ✓
	CRADA Signed (RDC and General Dynamics)	26 Apr 12 ✓
★	**Technical Assessment Brief for Mobile Asset Tracking and Reporting Device**	**9 May 13** ✓
	Key Decision Point for Prototype Completion	30 May 13 ✓
	Technology Demonstrations (Lincoln Labs, General Dynamics, Trident, ICS Software)	Dec 14
★	**Technical Assessment Brief: System Integration with Commercial Off The Shelf (COTS) Incident Action Plan (IAP) Software**	**Apr 14**
★	**Mobile Asset Tracking and Reporting Device: IONS System Test Results and Recommendations**	**Dec 14**
★	**System Integration with COTS IAP Software Test Results and Recommendations**	**May 15**
	Project End	Jul 15

★ Indicates RDC product.

Sponsor: CG-761

Stakeholder(s): CG-CPE, DHS S&T, Sector Detroit, Sector New Orleans

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
8105	1	Mr. Jon Turban, P.E. (860) 271-2834	CDR Tung Ly (202) 475-3011

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

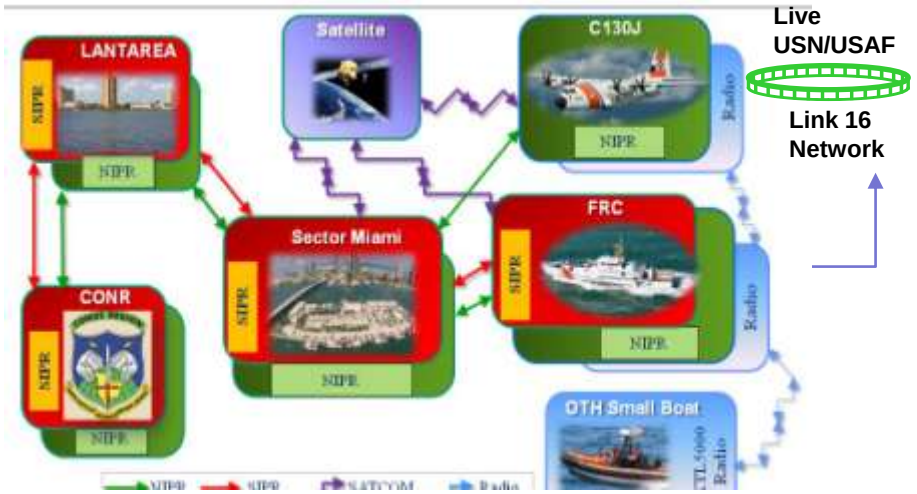
Includes funding from FY11 Oil Spill Research Earmark.
Project includes use of a Cooperative Research and Development Agreement (CRADA).

Support for Joint Technology Demonstration: Wide Area Surveillance Persistency and Command & Control/Situational Awareness (C2/SA) to Non-SEAWATCH Assets

Mission Need: Improvement of wide-area surveillance capability using Tactical Data Links (TDL).

Project Objectives:

- Demonstrate enhanced CG Tactical, Collection, Processing, Exploitation, and Dissemination (TCPED) cycle through increased persistency against contacts/targets of interest.
- Demonstrate the wide area surveillance and tactical data dissemination amongst NORAD/AFNORTH/FLTFORCOM and D1/D8/D5 using MILSTD 6016D for TDL.
- Demonstrate the sharing of C2/SA information to non-C2 platforms and amongst CG air/surface and land assets.



Key Milestone / Deliverable Schedule:

	Project Start	1 Apr 13 ✓
	CRADA Award	19 May 13 ✓
	Kickoff Meeting	6 Jun 13 ✓
	Phase I – Surface Demo of TDL on CG Assets	26 Jul 13 ✓
★	**Joint Technology Demo Phase I Brief**	**9 Sep 13 ✓**
	Phase II – Surface/Air Demo TDL	Feb 14
★	**Joint Technology Demo Phase II Brief**	**Apr 14**
★	**Joint Technology Demo Final Report**	**Jul 14**
	Project End	Nov 14

Sponsor: CG-761

Stakeholder(s): D7, D8, LANTAREA

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
8109	2	Ms. Judi Connelly (860) 271-2648	CDR Tung Ly (202) 475-3011

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

The project is involves a Cooperative Research and Development Agreement (CRADA) software product, Joint Range Extender (JRE) for Tactical Data Link Connectivity.

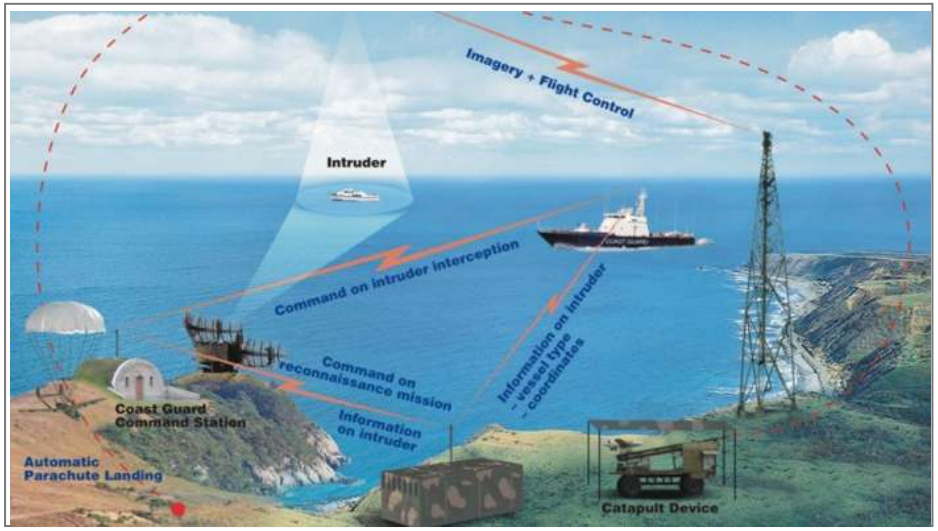
★ Indicates RDC product.

Advanced Communications Intelligence (COMINT) Technology

Mission Need: Process, Exploit, and Disseminate (PED) signals of interest as part of shipboard collection platforms to support advanced surveillance, identification, classification, and interception.

Project Objectives:

- Evaluate COMINT capabilities on CG vessels and compare performance against mission needs and requirements.
- Identify candidate systems that have the potential to meet requirements.
- Conduct demonstrations to validate candidate technical solutions for CG requirements.



Key Milestone / Deliverable Schedule:

Project Start	8 Nov 11 ✓
Technology Research	29 Mar 13 ✓
Tech Review & Gap Analysis	5 Jun 13 ✓
Identify Solutions	5 Jun 13 ✓
Conduct Demonstrations	26 Jul 13 ✓
★ **Advanced CG COMINT Capabilities: Next Step Shipboard Capabilities**	**22 Oct 13** ✓
Project End	Dec 13

Sponsor: CG-257

Stakeholder(s): CGCG

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
8305	3	Mr. Jay Spalding (860) 271-2687	CDR Tung Ly (202) 475-3011

Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:

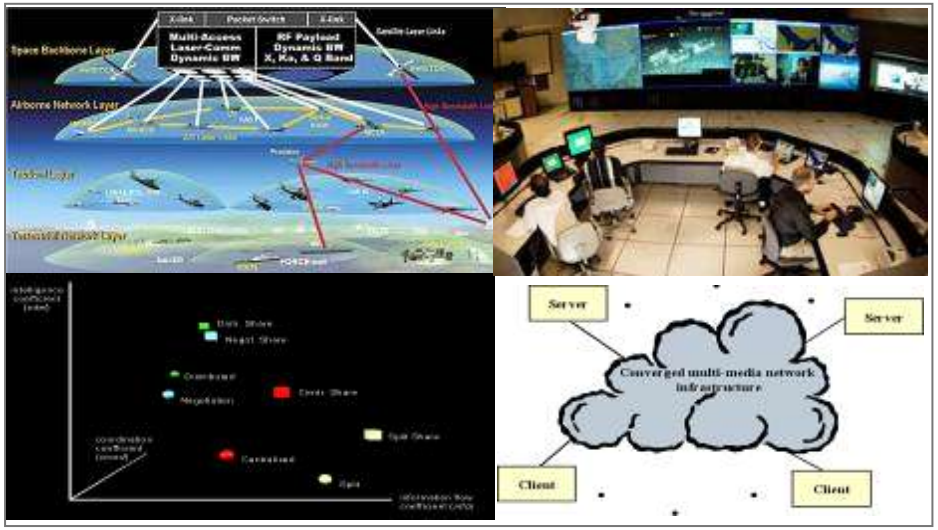
★ Indicates RDC product.

C4ISR Branch Support

Mission Need: Maintenance of RDC Branch competency and knowledge; provide rapid response; and provide external liaison.

Project Objectives:

- Maintain RDC competency in understanding present and future CG Mission Performance Gaps relating to Command, Control, Computers, Communications, Intelligence, Surveillance and Reconnaissance (C4ISR).
- Maintain RDC competency in technologies that currently or potentially could be used to eliminate or reduce Mission Performance Gaps across multiple CG Offices/Missions.



Key Milestone / Deliverable Schedule:

	Project Start	3 Dec 07 ✓
	Strategic Project Portfolio Alignment	Nov 13
	Idea Submission Review	Mar 14
★	**Long Range Wireless Connectivity Report**	**Jan 15**
★	**Automated Boat Registration Technology Report**	**Jan 15**
	New Project Execution Plans (PEP)/Proposals	As Required
	Conduct Market Research	As Required
	Technology Conferences	As Required
	Project End	TBD

Sponsor: CG-926

Stakeholder(s):

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
9991	3	Dr. Jack McCready (860) 271-2738	CDR Tung Ly (202) 475-3011

Expected Benefit:

Add to general R&D knowledge base

Notes:

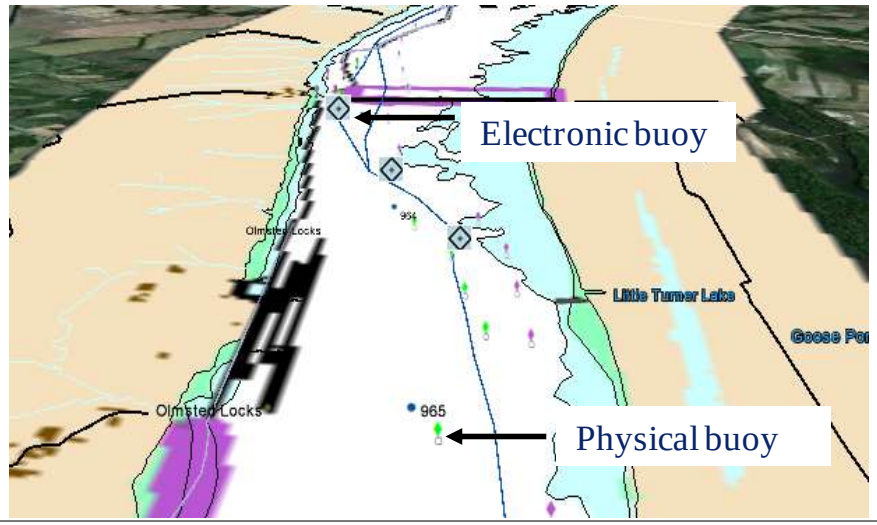
★ Indicates RDC product.

Western Rivers e-AtoN Technology Demonstration

Mission Need: Understand the benefits and demands posed by eNav technology to inform the development of requirements needed to support maritime security, safety, and mobility in the Western Rivers.

Project Objectives:

- Provide the Coast Guard and Army Corps of Engineers (USACE) and other partners with experience in distributing navigation information to users via the Automatic Identification System (AIS).
- Identify Coast Guard requirements to successfully operate the eNav system: agreements, policy changes, necessary infrastructure, the level of effort needed to operate, and the user acceptance challenges.



Key Milestone / Deliverable Schedule:

	Project Start	Dec 13
	Develop Test System Performance and User Response Protocol	May 14
	Develop RDC Electronic Aids to Navigation (e-AtoN) Test Bed Protocol	Jun 14
	Develop Coast Guard Coordination Protocol	Jun 14
	Develop Ohio River Test Protocol	Aug 14
	Key Decision Point for Phase II (Tech Demo Execution	Sep 14
★	**e-AtoN Technology Demonstration Test Plan**	**Sep 14**
	Project End	Oct 14

Sponsor: CG-NAV

Stakeholder(s): USACE, CG-761, CG-5PW

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-3	2	Mr. Chris Turner (860) 271-2623	Mr. Jaurin Joseph (202) 475-3493

Expected Benefit:

Improved Doctrine/CONOPs/TTPs

Notes:

★ Indicates RDC product.

Investigation of Vessel Biofouling Prevention & Management Options to Minimize the Transport of Non-Indigenous Species

Mission Need: Commercially available technologies for in-water hull cleaning and grooming.

Project Objectives:

- To inventory, categorize, and characterize the status of available technologies and commercial services for the prevention and management of vessel biofouling.
- Provide most current information to CGHQ for informing any future policy/regulations on vessel biofouling management.

Key Milestone / Deliverable Schedule:

	Project Start	Nov 13
	Market Research	Mar 14
	Publish Research	Apr 14
★	**Vessel Biofouling Management Options Report**	**Jun 14**
	Project End	Sep 14

Sponsor: CG-OES
Stakeholder(s): CG-REG

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-19	3	Ms. Danielle Elam (860) 271-2693	Mr. Jaurin Joseph (202) 475-3493

Expected Benefit:

Improved Doctrine/CONOPs/TTPs

Notes:

★ Indicates RDC product.

Oil Sands Products Response

Mission Need: Develop enhanced decision tools and recovery/mitigation tools for responding to spilled oil sands products.

Project Objectives:

- Develop decision making tools for Federal On-scene Commander (FOSC) to aid in response planning for spills of oil sand products in fresh and salt water.
- Analysis and assessment of behavior, response issues and strategies in fresh and salt waters.
- Build on G-MER Report "Risk Assessment of Transporting Canadian Oil Sands" available in Summer 2013.

Key Milestone / Deliverable Schedule:

	Project Start	Jan 14
★	**Behavior Assessment**	**Aug 14**
	FOSC Tools Development	Aug 15
	Project End	Aug 17

Sponsor: CG-MER

Stakeholder(s): USEPA, D9, D13

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-23	3	Mr. Kurt Hansen (860) 271-2865	Mr. Shannon Jenkins (202) 475-3490

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Partnering with Great Lakes Restoration Initiative (GLRI).

★ Indicates RDC product.

Next Generation Arctic Navigational Safety Information System

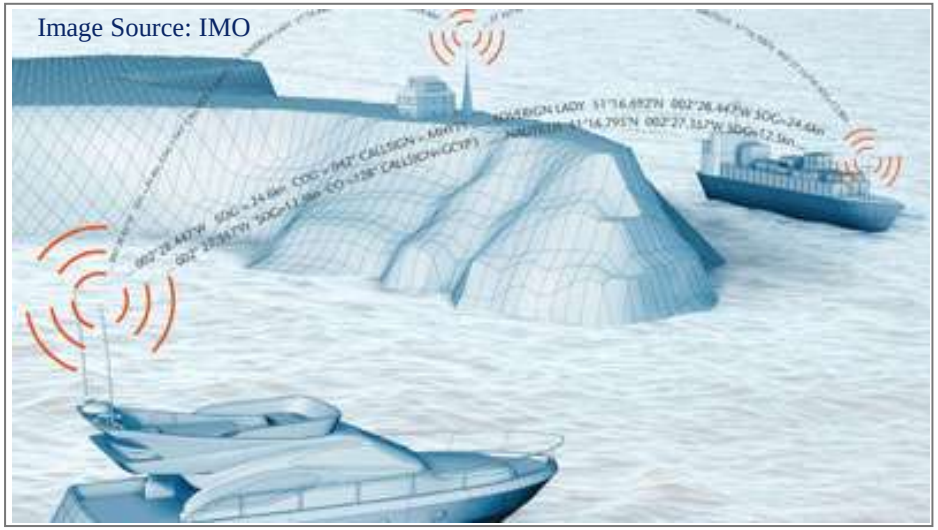
Mission Need: Reliable critical navigational safety information to identify, assess, and mitigate navigational risks in the Arctic region.

Project Objectives:

Partner with Marine Exchange Alaska (MXAK) to:

- Define the prototype system that will be developed under this public/private partnership.
- Develop the Arctic Navigation Safety Information System (ANSIS) prototype system for the technology demonstration.
- Install, test, and utilize ANSIS technology demonstration system.
- Monitor ANSIS technology demonstration system performance and mariner utilization.

Image Source: IMO



Key Milestone / Deliverable Schedule:

	Project Start…….……..…...	Nov 13
	Design ANSIS for Tech Demonstration…..…….….....	Jun 14
★	**ANSIS Functional Design CRADA Report……..…...…. **	**Aug 14**
	Build and Develop ANSIS Technology Demonstration System....	Nov 15
	Install, Test, & Utilize ANSIS Technology Demonstration System…	Jul 15
	Monitor System Performance & Mariner Utilization ……..…	Jan 16
★	**ANSIS Technology Demonstration Report……... **	**Apr 16**
	Project End…….....	May 16

Sponsor: CG-NAV

Stakeholder(s): CG-761, C3CEN

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-34	3	LCDR Michael Turner (860) 271-2882	Mr. Shannon Jenkins (202) 475-3490

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Project includes use of a Cooperative Research and Development Agreement (CRADA).

★ Indicates RDC product.

Chicago Sanitary Ship Canal (CSSC) Marine Safety Risk Analysis

Mission Need: Review marine safety risks associated with the fish barrier to determine adequacy of present risk mitigation strategies and make recommendations for alternatives.

Project Objectives:

- Conduct an analysis of risks to marine safety for commercial and recreational mariners that transit the Chicago Sanitary and Ship Canal (CSSC) in the vicinity of the fish barrier.
- Determine adequacy of present risk mitigation strategies.
- Recommend alternatives to the present strategies.

Key Milestone / Deliverable Schedule:

	Project Start	8 Nov 11 ✓
	Data Collection and Analysis	25 Aug 12 ✓
	Preliminary Risk Assessment	21 Dec 12 ✓
★	**Risk Analysis, Interim Summary**	**26 Feb 13 ✓**
	CSSC Risk Validation Session	19 Jun 13 ✓
★	**CSSC Marine Safety Risk Analysis Report**	**17 Sep 13 ✓**
	Adjudication of Asian Carp Regional Coordinating Committee (ACRCC) Report Review	Nov 13
	Project End	Nov 13

Sponsor: D9, USEPA-GLNPO

Stakeholder(s): Sector Lake Michigan, MSU Chicago

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
3329	3	Mr. M. J. Lewandowski (860) 271-2692	Mr. Jaurin Joseph (202) 475-3493

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Partnering with Great Lakes Restoration Initiative (GLRI).

★ Indicates RDC product.

Response to Oil In Ice

Mission Need: A group of methodologies to minimize the damage to the environment caused by spilled oil in extreme cold regions of the Arctic and Northern U.S.

Project Objectives:

- Develop equipment and techniques that can be used successfully to detect, track and recover oil in ice filled waters in all conditions.
- Test operational deployments of equipment by conducting a series of demonstrations in the Great Lakes and the Arctic of increasing complexity.
- Evaluate state of the art for response by supporting National Academy of Science (NAS) Arctic Response Assessment.

Key Milestone / Deliverable Schedule:

	Project Start	2 Nov 09 ✓
	Oil in Ice Demonstration 1	22 Apr 11 ✓
★	**Final Great Lakes Demonstration 1 Report**	**15 Jul 11** ✓
	Demonstration 2 - Great Lakes	27 Jan 12 ✓
★	**Final Great Lakes Demonstration 2 Report**	**11 May 12** ✓
	Great Lakes Demonstration 3	22 Feb 13 ✓
★	**Final Great Lakes Demonstration 3 Report**	**14 Jun 13** ✓
★	**New Technology Report for Response to Oil in Ice**	**Sep 14**
★	**Review Recommendations from NAS Report**	**Oct 14**
★	**FOSC Guide**	**Jun 15**
★	**Final Great Lakes Demonstration 4 Report**	**Jun 15**
	Project End	Aug 15

★ Indicates RDC product.

Sponsor: CG-MER

Stakeholder(s): D9, D17, BSEE, USEPA, PAC-7

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
4701	2	Mr. Kurt Hansen (860) 271-2865	Mr. Shannon Jenkins (202) 475-3490

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Includes funding from FY11 Oil Spill Research Earmark.

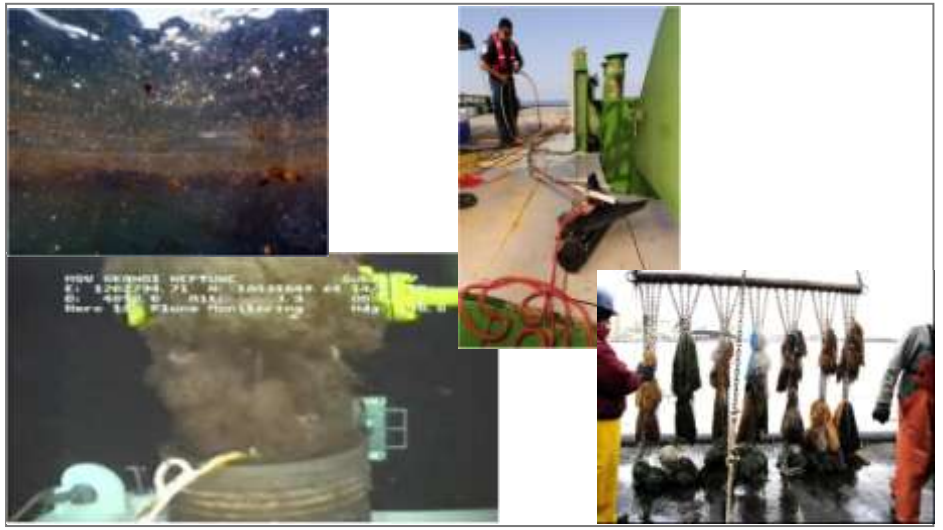
Partnering with Great Lakes Restoration Initiative (GLRI).

Detection and Mitigation of Oil within the Water Column

Mission Need: Accurately detect and mitigate subsurface oil within the water column to 10,000 feet.

Project Objectives:

- Develop new spill response technologies that detect and mitigate oil within the water column down to 10,000 ft.
  - Operate in all environmental conditions.
  - Locate and mark subsurface oil for possible removal.
  - High resolution for detecting small droplets of oil.
- Technology to be capable of operating off vessels of opportunity.
- Addresses near shore and rivers.



Key Milestone / Deliverable Schedule:

	Project Start	3 Aug 11 ✓
	Start Design Phase	2 Apr 12 ✓
★	**Detection of Oil in Water Column, Final Report: Sensor Design**	**5 Mar 13 ✓**
★	**Detection of Oil in Water Column, Final Report: Detection Prototype Tests**	**Jun 14**
★	**Detection of Oil in Water Column, Presentation: Mitigation Design**	**Dec 15**
★	**Detection of Oil in Water Column, Final Report: Mitigation Prototype Tests**	**Jan 17**
	Project End	Mar 17

Sponsor: CG-MER

Stakeholder(s): BSEE, ICCOPR

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
4702	3	Mr. Alexander Balsley (860) 271-2854	Mr. Shannon Jenkins (202) 475-3490

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

The project includes funding from a FY11 Oil Spill Research earmark.

Partnering with Bureau of Safety and Environmental Enforcement (BSEE).

★ Indicates RDC product.

Improve SMART Protocol Effectiveness

Mission Need: Enhance Special Monitoring of Applied Response Technologies (SMART) Program policies and tools that support evolving Coast Guard spill response needs.

Project Objectives:

- Identify gaps needed to fulfill the program's current mission.
- Identify short and long term technology improvements needed to meet the Program's mission requirements.

Key Milestone / Deliverable Schedule:

Project Start…… Nov 13

Review SMART Program Goals and Recent Performance History…… Apr 14

Identify New Technology and Training Capabilities…….. Aug 14

★ **Modernization of Special Monitoring of Applied Response Technologies (SMART) Technology and Methods – 2014..… Oct 14**

Project End…….. Nov 14

Sponsor: CG-MER, BSEE

Stakeholder(s): NSFCC

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
4703	3	Mr. Chris Turner (860) 271-2623	Mr. Shannon Jenkins (202) 475-3490

Expected Benefit:

Improved Doctrine/CONOPs/TTPs

Notes:

Partnering with Bureau of Safety and Environmental Enforcement (BSEE).

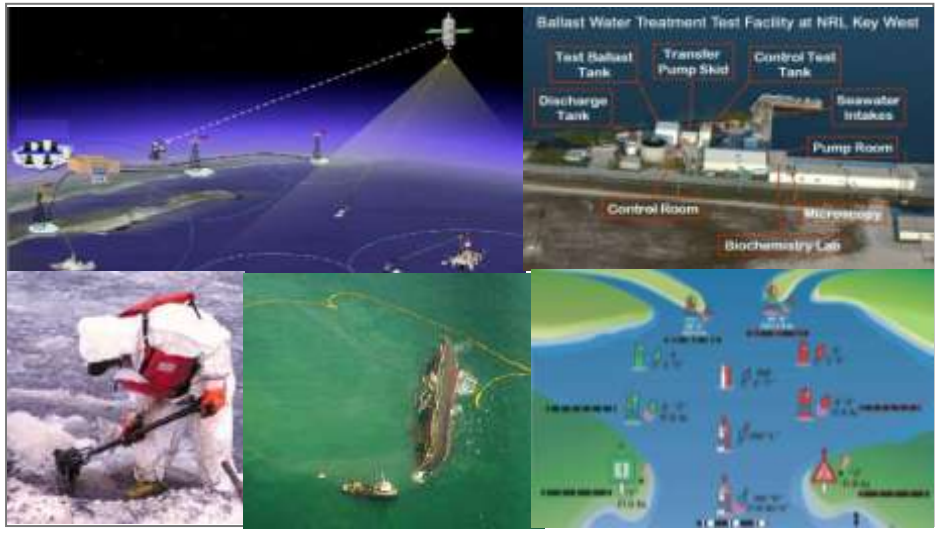
★ Indicates RDC product.

Environmental & Waterways (E&W) Branch Support

Mission Need: Maintain RDC Branch competency and knowledge; provide rapid response; and provide external liaison.

Project Objectives:

- Maintain RDC competency/technical knowledge in understanding present and future CG Mission Performance Gaps that are within the Branch's purview.
- Maintain RDC competency in technologies that currently or potentially could be used to eliminate or reduce CG Mission Performance Gaps within the Branch's purview.
- Maintain RDC competency/technical knowledge necessary to maintain leadership within the appropriate Subject Matter Expert (SME) community.



Key Milestone / Deliverable Schedule:

Project Start ……..…..	3 Dec 07 ✓
Strategic Project Portfolio Alignment ……...	Nov 13
Idea Submission Review……	Mar 14
New Project Execution Plans (PEP)/Proposals…….	As Required
Conduct Market Research…….	As Required
Technology Conferences…..……...	As Required
Project End……..……	TBD

Sponsor: CG-926

Stakeholder(s):

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
9993	3	Mr. James Fletcher (860) 271-2659	Mr. Shannon Jenkins (202) 475-3490

Expected Benefit:

Add to general R&D knowledge base

Notes:

★ Indicates RDC product.

Panga Search Planning Tools/ Probability of Success (POS) Calculation Analysis

Mission Need: Improved Law Enforcement (LE) search planning tools for finding Pangas or other vessels of interest that are trying to avoid detection.

Project Objectives:

- Define the "Panga" threat in Sector San Diego Area of Responsibility (AOR) and document how it is currently being managed.
- Develop ideas and/or recommendations on how to improve near-term chances for interdicting "Pangas" in the Sector San Diego AOR.
- Use Operations Research, Modeling and Simulation (ORMS) to explore the feasibility of a LE search planning system for the Coast Guard as a whole.
- Conceptualize the proposed system with regard to Enterprise Architecture (EA).
- If appropriate, seek sponsor and CG-6 approval to enter the Systems Development Life Cycle (SDLC) process - Conceptual Planning Phase.

Key Milestone / Deliverable Schedule:

	Project Start	21 Jun 13 ✓
	Collect Sector San Diego Threat Information	Dec 13
	Local Mission Effectiveness Improvement Recommendations	Apr 14
	Determine Feasibility of Enterprise-wide CG LE Search System	Jun 14
★	**Conceptual LE Search Planning System**	**Aug 14**
	Present Concept to Programs & Stakeholders	Aug 14
	Seek Program Memo to CG-6 for System Justification	Sep 14
	Key Decision Point: FY15 SDLC Conceptual Planning Project Start	Oct 14
	Project End	Oct 14

Sponsor: CG-MLE

Stakeholder(s): Sector San Diego, PAC-7, D11, C3CEN

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
1025	3	Mr. Warren Heerlein (860) 271-2625	Mr. Shannon Jenkins (202) 475-3490

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

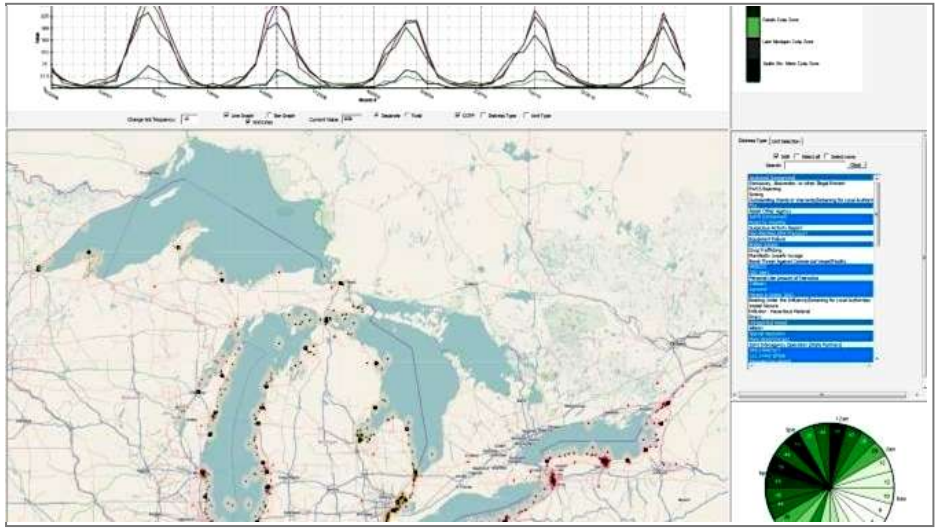
★ Indicates RDC product.

Support Development of Coastal Operations Analytical Suite of Tools (COAST)

Mission Need: Accredited Modeling and Simulation (M&S) tools that support operational and programmatic decision making within the Coastal Zone, Great Lakes or Inland Waters.

Project Objectives:

- Complete Search and Rescue Visualization Analytics (SARVA) and Boat Allocation Model (BAM) Verification, Validation, and Accreditation (VV&A).
- Support development and complete VV&A of Aviation Capability and Capacity Assignment Module (ACCAM).
- Support development/VV&A of subsequent modules.



Key Milestone / Deliverable Schedule:

	Project Start …..…….……	1 Oct 12 ✓
★	**SARVA Verification and Validation Report……..…**	**31 Jan 13 ✓**
★	**ACCAM Modeling Capability Development Plan……...**	**22 Mar 13 ✓**
★	**BAM Verification and Validation Report……**	**Dec 13**
★	**ACCAM Final V&V Report…….……..……**	**Aug 14**
	Project End……..	Jun 15

Sponsor: CG-771

Stakeholder(s): DHS OUP, MSC, CG-7

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
7520	2	Mr. Mike Lehocky (860) 271-2698	LT Derek Storolis (202) 475-3492

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

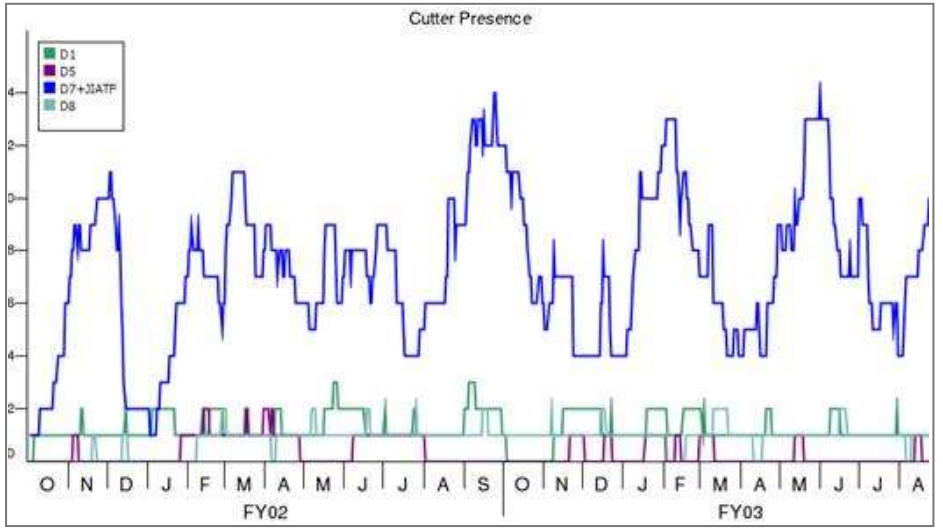
★ Indicates RDC product.

CGMOES Next Generation

Mission Need: An easy-to-use, streamlined capability for routine Coast Guard-wide asset allocation and force structure decision support.

Project Objectives:

- Develop an organic capability to support quick turnaround answers to senior leadership force structure questions driven by Congress regarding: eliminations of asset classes, changes in mission priorities, etc.
- Reduce the time and costs involved with current modeling approaches.
- Improve the defensibility of model-based decision support system.



Key Milestone / Deliverable Schedule:

	Project Start	8 May 13 ✓
	Phase I - Procure Support for Production Infrastructure	26 Sept 13 ✓
	Phase II - Develop a Business Case for the Next Generation (NextGen) GMOES	Mar 14
★	**Business Case for NextGen CGMOES**	Mar 14
	Phase III Create Production Hardware/Software (HW/SW) Infrastructure	Mar 14
	Phase IV KDP Upgrade CGMOES or Update NextGen	Mar 14
	Phase V Update NextGen to Coast Guard Modeling and Simulation Master Plan and Concepts of Operations 3.0	Mar 15
★	**Verification and Validation of NextGen**	**Mar 15**
	Project End	Apr 15

Sponsor: CG-771

Stakeholder(s): LANTAREA, PACAREA, CG-926, M&S Council

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
7929	1	Ms. Kathleen Kettel (860) 271-2770	LT Derek Storolis (202) 475-3492

Expected Benefit:

Influence Mission Support efficiencies

Notes:

★ Indicates RDC product.

Modeling & Simulation (M&S) Center of Expertise (COE) Branch

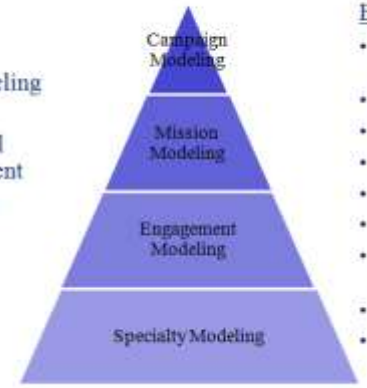
Mission Need: Maintain RDC Branch competency and knowledge; provide rapid response; and provide external liaison.

Project Objectives:

- Maintain and enhance Branch competencies (Fleet Mix Strategic Analysis, Tactical Force Package Analysis, Sensor Performance Analysis, Data Repository, Analysis, and Visualization).
- Provide CG-9 a core competency for analysis, modeling and simulation by investigating/developing modeling approaches that provide more efficacy and efficiency for acquisition decision-making.

Analysis Questions → Skilled Analysts/Tools → Analysis Products

Ex. Tools:
- CGMOES
- Arctic Tactical Modeling Environment
- Coast Guard Tactical Modeling Environment
- Human Performance Modeling
- Cost Modeling



Ex. Analysis Products:
- Fleet Mix Analysis (CG-wide, Western Rivers)
- OPC Alternatives Analysis
- HLS Mission Analysis
- DOMICE Mission Analysis
- VUAV/UAS4NSC
- D7 Airship Analysis
- Manned Covert Surveillance Aircraft CONOPs
- C4ISR Alternatives Analysis
- SIGINT Requirements & Capabilities Analysis

Key Milestone / Deliverable Schedule:

Project Start……..	3 Dec 07 ✓
Strategic Project Portfolio Alignment …….…...	Nov 13
Idea Submission Review……..…	Mar 14
Stand-up New M&S COE Space at RDC…..……..……	Dec 13
New Project Execution Plans (PEP)/Proposals/Tasks……...	As Required
Accreditation Management..……..	As Required
Technology Conferences.…….……..	As Required
Project End ……..……	TBD

Sponsor: CG-926

Stakeholder(s): M&S Council

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
9997	3	CDR Sean Lester (860) 271-2880	LT Derek Storolis (202) 475-3492

Expected Benefit:

Add to general R&D knowledge base

Notes:

★ Indicates RDC product.

Short Term Modeling & Simulation Support Efforts (M&S COE Tasks)

Purpose:

Provide Modeling, Simulation or Analysis to focused operational or business questions. Short term efforts are characterized by limited complexity with the need for standard technical and contracting approaches.

FY14 Efforts:

Submission Date	Task	Title	Office Supported	Funding Type
Ongoing	7400010	VV&A of OREOs	RDC	RDT&E
Ongoing	7400011	PROTECT Rollout - Western Rivers	LANT-7	OE
Ongoing	7400012	V&V of PROTECT	LANT-7	RDT&E
Ongoing	7400016	WRFMAT Fleet Size Excursions	CG-9323	AC&I
Ongoing	7400017	CGTME Library Development	RDC	RDT&E
Ongoing	7400019	SUAS Modeling for Project 7804	RDC	RDT&E
Ongoing	7400021	Plum Island PROTECT	DHS	RDT&E

Boat Operations Quality Assurance System (BOQAS)

Mission Need: A dedicated data acquisition system to record boat operational data for use in engineering, safety, and training functions.

Project Objectives:

Support a go/no-go decision for the development of a standardized boat data acquisition system on designated high speed, heavy weather, or special purpose CG boats by:

- Complete market survey of appropriate interfaces, instruments, and displays.
- Completing a cost analysis using proposed architectures on candidate boat types.
- Develop proposal for a structured program to analyze quality of operations data and provide access to command leadership or maintenance personnel to 1) improve safety; 2) provide data background to unanticipated operational events.

Key Milestone / Deliverable Schedule:

	Project Start	Nov 13
	Market Survey	May 14
	Cost Analysis	May 14
	Quality Assurance Program/System proposal	May 14
★	**BOQAS Final Report**	**Aug 14**
	Technology Transfer Agreement (TTA)	Sep 14
	Project End	Oct 14

Sponsor: CG-731

Stakeholder(s): SFLC, CG-45, CG-113

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2013-27	3	Mr. Jay Carey (860) 271-2702	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

★ Indicates RDC product.

Tactical Boarding Team Member Neutral Buoyancy

Mission Need: Maintain neutral buoyancy if Tactical Boarding Team (TBT) members' inflatable flotation system fails.

Project Objectives:

- Phase I will be to:
  - Research and clearly define the Key Performance Parameters (KPP) required to ensure a Closed Cell Foam (CCF), or other buoyant material, system which can be inserted into TBT members' tactical gear to achieve neutral buoyancy when members are fully outfitted; and
  - Identify candidate technologies/devices that potentially meet the KPPs.
- Phase II will be to research passive flotation options by:
  - Identifying specific candidate technologies/devices for providing neutral buoyancy to fully outfitted TBT members; and
  - Conducting quantitative buoyancy testing of systems as appropriate.

Key Milestone / Deliverable Schedule:

Project Start…….……..	Nov 13
Stakeholders Risk Based Workshop…….....	Jan 14
Key Decision Point (Go/No-Go)…….	Feb 14
Buoyancy Testing…….……...	May 14
★ **TBT Member Neutral Buoyancy Report…..…….. **	**Aug 14**
Project End…….....	Sep 14

Sponsor: CG-DOD

Stakeholder(s): MSRT, MSST, TACLET

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-12	3	Mr. Brian Dolph (860) 271-2817	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Follow on to Project 7924 (Tactical Flotation & Buoyancy) and the efforts of the "Tactical Flotation and Buoyancy Working Group" chartered in Dec 2010.

★ Indicates RDC product.

Diesel Outboard Development

Mission Need: The means to investigate the "Single" diesel fuel initiative for boats.

Project Objectives:

- Conduct technical and market research on current diesel outboard engines available in 50-300HP range.
- Identify and test technologies that could be implemented to CG capabilities.
- Partner with manufactures to test diesel outboards on CG vessel.

Key Milestone / Deliverable Schedule:

	Project Start	Nov 13
	Issue Request for Information (RFI)	Jan 14
	Vet RFI Responses	Apr 14
	Key Decision Point to Determine Path Forward	Aug 14
	CRADA/BAA	TDB
	Identify CG Asset for Field Test	TBD
	Engine Test on CG Asset	TBD
★	**Diesel Outboard Feasibility**	**TBD**
	Project End	TBD

Sponsor: CG-45

Stakeholder(s):

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-21	3	LT Brent Fike (860) 271-2891	LCDR Anthony Ericson (202) 475-3748

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Project includes Cooperative Research and Development Agreement (CRADA) or Broad Agency Announcement (BAA) following RFI.

★ Indicates RDC product.

Define and Communicate Exclusion Zones

Mission Need: Capability to physically mark and clearly communicate the boundaries of an area of exclusion, including both fixed and moving security zones.

Project Objectives:

- Review user needs, consider short-term and longer-term solutions.
- Investigate solutions on the market to determine the best possible solutions to evaluate.
- Select and test solution(s) that will unambiguously mark fixed and moving security zones.

Key Milestone / Deliverable Schedule:

	Project Start	Nov 13
	Needs Analysis	Feb 14
	Issue Request for Information (RFI)	Jun 14
	Vet RFI	Sep 14
★	**Phase 1 Report**	**Nov 14**
	Evaluate Short-term Solution	Apr 15
★	**Phase 2 Report on T&E**	**Oct 15**
	Demo of Longer Term Solution(s)	Jul 16
★	**Phase 3 Report on Long-Term Solution**	**Oct 16**
	Project End	Nov 16

★ Indicates RDC product.

Sponsor: CG-MSR

Stakeholder(s): CG-721, MSRT, LANTAREA, PACAREA

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-22	3	Ms. D.J. Hastings (860) 271-2798	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Leverages previous work on Project 5645: Unambiguous Warning Devices.

Operational Testing of Alternative Fuels

Mission Need: The means to meet mandated future greenhouse gas emissions and energy reduction targets.

Project Objectives:

- Identify benefits from CG use of alternative, lower carbon footprint diesel and gasoline replacement fuels in it's boats based on materials, bench, field and operational tests.
- Identify benefits from non-ethanol gasoline replacement fuels in the marine environment.
- Cooperative Research & Development Agreements (CRADA) have been executed between the CG and Honda America and Mercury Marine for the gasoline outboard engine alternative fuel and with Cummins for the diesel engine alternative fuel.
- Oak Ridge National Laboratory (ORNL) will be leveraged through a Military Interdepartmental Purchase Request (MIPR) to provide technical expertise on alternative fuels.

Key Milestone / Deliverable Schedule:

Project Start	16 Feb 11 ✓
CRADA with Honda	9 Jun 11 ✓
CRADA with Mercury Marine	12 Jan 12 ✓
CRADA with Cummins	2 Feb 12 ✓
Start Diesel Testing	11 Mar 13 ✓
Start Gasoline Testing	29 Jul 13 ✓
★ **Evaluation of a Diesel Fuel Alternative for Coast Guard Boats**	**Jul 14**
★ **Evaluation of a Gasoline Fuel Alternative for Coast Guard Boats**	**Dec 14**
Project End	Jan 15

Sponsor: CG-731
Stakeholder(s): CG-46, CG-453, SFLC

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
4103	3	Mr. Mike Coleman (860) 271-2708	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Direct Product Line/Core Technology Support (Tech Refresh, DMS, etc.

Notes:

CRADAS have been executed with Honda, Mercury & Cummins.

★ Indicates RDC product.

Cost Benefit Analysis of Boat Lifts

Mission Need: Reduce maintenance costs associated with in water storage of Coast Guard boats.

Project Objectives:

- Determine if boat maintenance and repair costs are reduced sufficiently by storing Coast Guard boats out of the water on a boat lift or similar system to offset the costs of installation, maintenance, operation and training of the storage system.
- Recommend whether the CG should pursue future utilization of this solution including salient characteristics of the recommended style of lift.

Key Milestone / Deliverable Schedule:

Project Start	8 Dec 11	✓
Investigate Boat Lift and Costs	1 Mar 12	✓
Install Boat Lifts for Evaluation Period	5 Sep 12	✓
1149 Boat Lifts to Station/ANT	Jul 14	
★ **Boat Lift Evaluation Report**	**Sep 14**	
Project End	Sep 14	

Sponsor: CG-926

Stakeholder(s):

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
5103	3	LT Brent Fike (860) 271-2891	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:

★ Indicates RDC product.

Joint Non-Lethal Weapons Directorate Small Vessel Entanglement

Mission Need: A capability to non-lethally stop a non-compliant vessel.

Project Objectives:

- Team with Naval Surface Warfare Center (NSWC) Dahlgren and Carderock to: Conduct tests on outboard and inboard vessels, optimize full-scale net design, and develop and demonstrate launcher capabilities.
- Once the system design is complete conduct Developmental Test and Evaluation (DT&E) and Operational Test and Evaluation (OT&E) to evaluate system for fleet use.
- Draft and finalize Tactics, Techniques, and Procedures (TTP) for CG fleet use upon completion of OT&E.

Key Milestone / Deliverable Schedule:

Project Start	12 Dec 07 ✓
Net Optimization Tests vs. Inboard Vessels	21 Jan 11 ✓
Net Optimization Tests vs. Outboard Vessels	2 Aug 11 ✓
Launcher Modification	2 Oct 11 ✓
Small Vessel Surface Entanglement (SVSE) Prototype System Delivered/DT&E	26 Mar 12 ✓
Monitor and Support OT&E	Jan 14
Support TTP Development	Apr 14
SVSE Technology Transfer Agreement (TTA) Signed	Apr 14
★ **SVSE Small Naval Arresting Rope Entangler (SNARE) Operational Suitability Assessment**	**May 14**
Project End	Jun 14

Sponsor: CG-721

Stakeholder(s): FORCECOM, PACAREA, MSRT, MSST, DCO

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
56411	3	Ms. D.J. Hastings (860) 271-2798	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Partnering with Office of Naval Research (ONR), Joint Non-Lethal Weapons Directorate (JNLWD) and DOD efforts.

★ Indicates RDC product.

Non-Lethal Impact Munitions (NLIM)

Mission Need: Capability to enforce maritime law with non-lethal systems.

Project Objectives:

- Participate in the NLIM Working Group:
  - Contribute to the selection of non-lethal weapons for the Coast Guard.
  - Contribute to the selection and prioritization of Key Performance Parameters (KPP) and Key System Attributes (KSA) for non-lethal weapon systems for the Coast Guard fleet.
- Evaluate the selected NLIM rounds and weapons systems, against the KPP's and KSA's selected by the NLIM Working Group.
- Assist the Working Group in drafting Tactics, Techniques and Procedures (TTP).

Key Milestone / Deliverable Schedule:

Project Start	Nov 13
Participate in the NLIM Working Group	Jun 14
Conduct Developmental Test and Evaluation (DT&E) to Evaluate the NLIM Systems	Jul 14
Develop NLIM Draft TTP Amendments (if needed)	Aug 14
★ **NLIM Development, Test and Evaluation (DT&E) Report**	**Sep 14**
Project End	Oct 14

Sponsor: CG-721

Stakeholder(s): CG-7d, CG-5RE, CG-MLE, FC-T, FC-A

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
5674	3	Ms. D.J. Hastings (860) 271-2798	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Partnering with Technical Support Working Group (TSWG) and Joint Non-Lethal Weapons Directorate (JNLWD).

★ Indicates RDC product.

Arctic Craft Investigation

Mission Need: Boat capability to support mission operations in the Arctic.

Project Objectives:

- Conduct technical and market research on craft that could provide the CG with Arctic capability.
- Conduct a demonstration of Arctic craft to evaluate their effectiveness to execute CG missions on the North Slope of Alaska.
- Identify and test technologies that could be implemented to improve current CG craft's Arctic capabilities.

Key Milestone / Deliverable Schedule:

	Project Start	1 Oct 10 ✓
★	**Arctic Craft Investigation Report**	**20 Aug 11 ✓**
★	**Arctic Craft Demonstration**	**8 Nov 12 ✓**
★	**Evaluation of Boat Propulsion Systems in Ice**	**Dec 13**
★	**Improving Cold Weather Capabilities of Coast Guard Boats**	**Jul 14**
	Project End	Aug 14

Sponsor: CG-731

Stakeholder(s): D17, SFLC, PACAREA

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
6204	3	Mr. Jason Story (860) 271-2833	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Inform follow-on acquisition/enterprise deployment

Notes:

Project includes use of a Broad Agency Announcement (BAA).

★ Indicates RDC product.

Arctic Operations Support 2013

Mission Need: A scientific analysis (R&D) on the effects of the Arctic environment on CG mission execution.

Project Objectives:

- Establish clear Research, Development, Test, and Evaluation (RDT&E) objectives for supporting CG missions in the Arctic.
- Document and analyze Oil in Ice Search, Detect and Recover exercise conducted during Arctic Shield 2013 and make recommendations for improving CG capabilities and Mission effectiveness.
- Demonstrate with Commercial/Government Off The Shelf (COTS/GOTS) technologies the ability to recover spilled oil in Arctic ice.

Key Milestone / Deliverable Schedule:

Project Start	1 Nov 12 ✓
Determine Nature of Support	15 Jan 12 ✓
Approved Plan	15 Feb 13 ✓
Coordinate Exercise	30 Aug 13 ✓
Conduct Exercise	25 Sep 13 ✓
★ **Documentation of 2013 Arctic R&D Support**	**Apr 14**
Project End	May 14

Sponsor: CG-926

Stakeholder(s): CG-711, CG-MER, D17, PAC-7

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
6209	1	Mr. Scot Tripp (860) 271-2680	Ms. Mary Kate Watts (202) 475-3724

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

The project will be accomplished through partnerships with DHS S&T Office of University Programs (OUP), National Oceanic and Atmospheric Administration (NOAA), and the Department of Interior Bureau of Safety and Environmental Enforcement (BSEE).

★ Indicates RDC product.

Arctic Shield 2014 Technology Demonstrations

Mission Need: Expanded operational and resource capabilities assessments in the Arctic.

Project Objectives:

- Based on the evaluations of the technology types employed for Arctic Operations Support 2013, refine capabilities improvements to execution of Coast Guard missions in the Arctic.
- Continue to nurture joint efforts and interagency cooperation between government sectors and civilian entities on the North Slope and abroad.
- Integrate and assess potential of new technologies in enhancing Coast Guard Arctic operations.
- Facilitate and provide support to other Arctic projects in accomplishing their testing objectives.

Key Milestone / Deliverable Schedule:

Project Start	Oct 13
Preliminary Test Plans for Technology Demonstration and Operational Testing Finalized	Apr 14
Site Visit to D17 and North Slope to Liaise and Survey Shoreside Test Locations	May14
Load Equipment on CGC HEALY/Install Gear on North Slope	May 14
Conduct Demonstration and Testing	Jul 14
★ **Arctic Shield 2014 Operational Evaluation and Logistics Summary Report**	**Oct 14**
★ **Arctic Shield 2014 Technology Demonstration Video**	**Oct 14**
Project End	Dec 14

Sponsor: CG-926

Stakeholder(s): D17, PAC-7

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
6210	1	Mr. Scot Tripp (860) 271-2680	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Project will leverage other organizations with Arctic interests/efforts to the maximum extent possible.

Follow on to 2012/2013 efforts.

★ Indicates RDC product.

Joint Marine Test Detachment In-Situ Burn Capabilities

Mission Need: Marine in-situ burn testing capability.

Project Objectives:

- Evaluate and update In-Situ Burn (ISB) capabilities to support Research, Development, Test, and Evaluation (RDT&E).
- Identify programs and stakeholders and inform them of available capabilities.
- Improve wave generator in accordance with American Society of Testing Materials (ASTM) approved standards for fire retardant boom testing, and conduct new work given new capabilities.

Key Milestone / Deliverable Schedule:

Project Start	26 Jun 13 ✓
Conduct Assessment for Material Condition of the ISB Tank	Nov 13
Initial Operational Capability	Nov 13
Commercial Upgrades at Designate Site	Aug 14
Full Operational Capability	Sep 14
Project End	Sep 14

Sponsor: CG-926

Stakeholder(s):

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
7751	3	Mr. Lee Graddick (251) 441-5040	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Partnering with Navy Research Lab (NRL).

★ Indicates RDC product.

Evaluation of 270' WMEC Pitch/RPM Schedules

Mission Need: Improved energy efficiency in the operation of cutters to help meet energy conservation goals and Greenhouse Gas (GHG) reduction goals.

Project Objectives:

- Assess pre-determined pitch/Revolutions per Minute (RPM) combinations through comprehensive underway data collection with an operational cutter.
- Analyze results and compare with prior (1998) fuel savings projections.
- Deliver recommendations for implementation.

Key Milestone / Deliverable Schedule:

	Project Start ……..	Nov 13
	Complete Baseline Data Collection ……...……...……..	Jan 14
	Complete Data Analysis ……..……..	Feb 14
	Develop Recommendation to Schedule Changes ……..	Apr 14
	CGC HARRIET LANE Sea Trial ……..…….	Jun 14
★	**Evaluation of 270'WMEC Pitch/RPM Schedule Changes…..**	**Aug 14**
	Project End ……	Sep 14

Sponsor: CG-46
Stakeholder(s): SFLC

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
7805	3	Mr. Jay Carey (860) 271-2702	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:

★ Indicates RDC product.

Surface Branch Support

Mission Need: Maintain RDC Branch competency and knowledge; provide rapid response; and provide external liaison.

Project Objectives:

- Maintain RDC competency and technical knowledge in understanding present and future CG Port Security and Law Enforcement Mission Performance Gaps. Maintain competency and technical knowledge in Vessel Technology, Alternative Energy, and Acquisition Programs Support.
- Support CG Weapons of Mass Destruction (WMD) program by providing subject matter expertise and Other Government Agency (OGA) leveraging.
- Coordinate Arctic projects.

Key Milestone / Deliverable Schedule:

Project Start…….……	3 Dec 07 ✓
Strategic Project Portfolio Alignment ……....	Nov 13
Idea Submission Review……	Mar 14
New Project Execution Plans (PEP)/Proposals…….	As Required
Conduct Market Research…….	As Required
Technology Conferences…..……...	As Required
Project End…….……....	TBD

Sponsor: CG-926

Stakeholder(s):

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
9994	3	Mr. Rich Hansen (860) 271-2866	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Add to general R&D knowledge base

Notes:

Partnering with Joint Non-Lethal Weapons Directorate (JNLWD) and Domestic Nuclear Detection Office (DNDO).

★ Indicates RDC product.

Short Term Analytical Support Efforts (REACT Reports)

Purpose:

Provide short term analytical support to CG decision makers with a means to access quick, inexpensive analyses to investigate a wide range of technology issues relating to current or planned CG operations or procurements. Larger analytical support projects will typically require funding to cover the cost of RDC labor & overhead and other direct costs.

FY14 Efforts:

Assigned Branch	Title	Office Supported	Delivery Date
C4ISR	App Store - How to get there	CG-7/CG-6	Nov 13
C4ISR	Automated Boat Registration	CG-MSR/NPS*	Mar 15
C4ISR	Long Range Wireless Network: Boarding Team to Cutter	CG-761/NPS*	Dec 15
Aviation	SAR using UAV Swarm Search Capability Tot.	CG-711/NPS*	Sep 14

* Leveraging research being conducted by Naval Postgraduate School (NPS).

Acquisition Directorate

Research, Development, Test & Evaluation

FY14 Project Portfolio

Externally Funded Projects

CG R&D Center

COMMSTA Maintenance Cost Estimate

Mission Need: Accurate maintenance cost estimate to support remotely operated Communication Stations (COMMSTAs).

Project Objectives:

- Develop a cost estimate for personnel and maintenance costs for remotely operated COMMSTAs.
- Conduct a cost comparison to determine cost savings associated with utilizing government and/or contractor personnel for maintenance.

Key Milestone / Deliverable Schedule:

Project Start…….....	25 Apr 13 ✓
Site Visit COMMSTA.....	Oct 13
Cost Data Collection.....	Dec 13
Interim Draft Report.....	Feb 14
★ **Communication Station Maintenance Cost Estimate…….**	**Mar 14**
Project End…….....	Apr 14

Sponsor: C3CEN

Stakeholder(s): LANTAREA, PAC-6

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
3404	3	Ms. Monica Cisternelli (860) 271-2741	LT Derek Storolis (202) 475-3492

Expected Benefit:

Direct Acquisition Support (MAR, MNS, CONOPS, ORD, AA, LCCE, T&E, etc)

Notes:

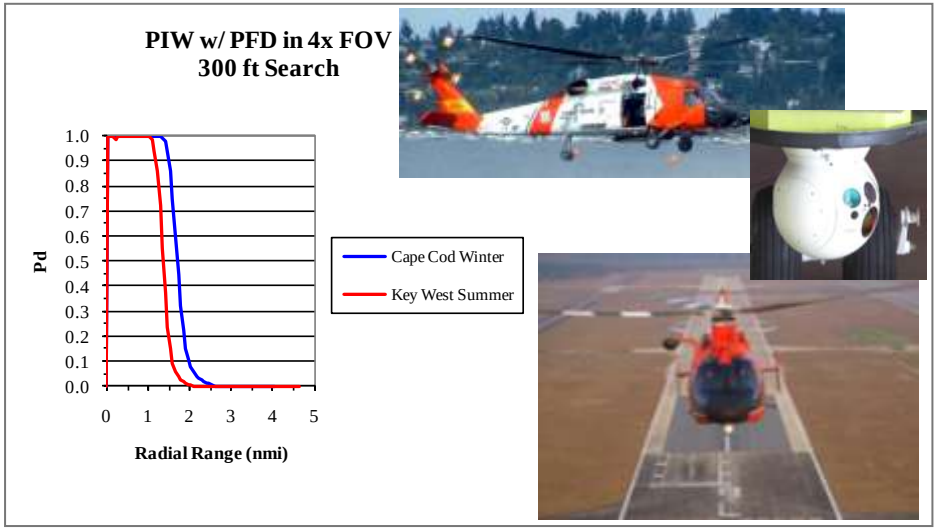
★ Indicates RDC product.

Operational Testing of Electro-Optical/Infrared Sensor System (ESS)

Mission Need: Tactics, Techniques, and Procedures (TTP) and field-validated operational performance data for the Electro-Optical Infrared Sensor System.

Project Objectives:

- Validate effectiveness and provide recommendations to improve current ESS settings, configurations and employment techniques on the MH-60T and MH-65C/D helicopters.
- Develop lateral range curves and sweep widths for the ESS Thermal Imager against typical Search and Rescue (SAR) targets in various environmental conditions.
- Characterize operational performance and provide TTP input for all ESS components.



Key Milestone / Deliverable Schedule:

	Project Start	9 Dec10 ✓
★	**Post-test Briefing on ESS Validation Test**	**28 Jun 11 ✓**
	Phase 3 At-sea Operational Performance Testing	14 Oct 11 ✓
★	**Interim Report & Brief on FY11 ESS Operational Performance Testing**	**28 Mar 12 ✓**
	Phase 4 At-sea Operational Test Event 1	9 May 13 ✓
	Phase 4 At-sea Operational Test Event 2	13 Jan 14
★	**Post-test Briefing on ESS Phase IV Test**	**May 14**
★	**Final Report & Brief on FY14 ESS Operational Performance Testing**	**Aug 14**
	Project End	Aug 14

★ Indicates RDC product.

Sponsor: CG-931

Stakeholder(s): CG-711, CG-SAR

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
7603	3	LT Stephen Dunn (860) 271-2789	CDR Albert Antaran (202) 475-3049

Expected Benefit:

Improved Doctrine/CONOPs/TTPs

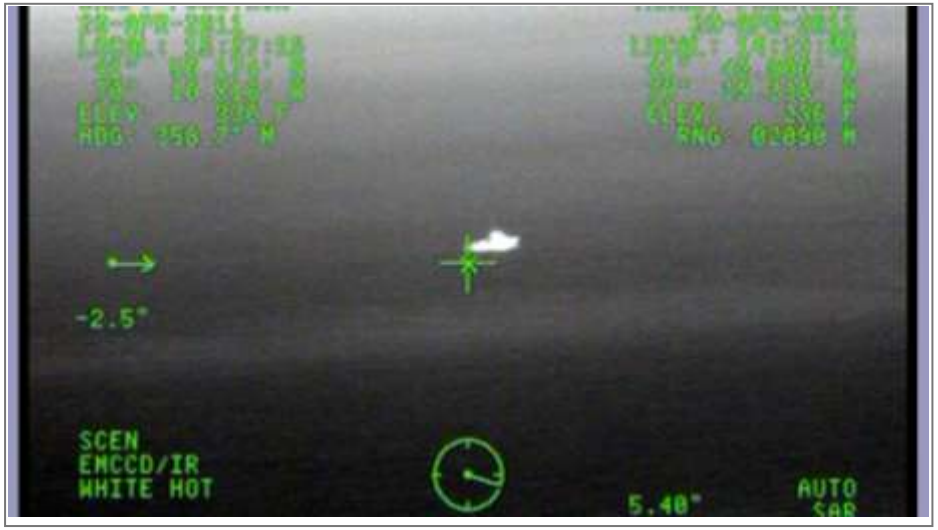
Notes:

MH-65D ESS Geo-positioning Accuracy and Maintenance Impact Flight Test

Mission Need: Validate Electro-optical Infrared Sensor System (ESS) geo-positioning accuracy and reduce resource burden imposed by current calibration requirements for USCG MH-65D fleet.

Project Objectives:

- Conduct airborne MH-65D ESS geo-positioning accuracy tests to evaluate target positioning errors (1) after conducting a standard calibration and (2) without calibration following various maintenance actions that involve removal and replacement of key ESS components.
- Document geo-positioning errors for each test scenario.
- Provide recommendations concerning circumstances under which re-calibration should be performed.



Key Milestone / Deliverable Schedule:

	Project Start	Dec 13
	Conduct Geo-position Accuracy Testing	Mar 14
★	**Analysis of MH-60DESS Geo-positioning Accuracy and Maintenance Impact**	**Jul 14**
	Project End	Aug 14

Sponsor: CG-931

Stakeholder(s): ALC-ESD, CG-711, CG-41, CG RW Air Stations

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
7752	3	Mr. Gary Hover (860) 271-2818	CDR Albert Antaran (202) 475-3049

Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:

Leverages prior RDC work on MH-60 RW Aircraft.

★ Indicates RDC product.

Polar Icebreaker Acquisition Support

Mission Need: Acquire a new polar icebreaking capability.

Project Objectives:

Prepare acquisition support documents including:

- Preliminary Operational Requirements Document (PORD).
- Operational Requirements Document (ORD).
- Alternatives Assessment (AA).

Key Milestone / Deliverable Schedule:

	Project Start……	13 May 13 ✓
★	**PORD ……..…….…….**	**Sep 14**
★	**AA Study Plan ……...**	**Sep 14**
★	**ORD ……..……..**	**Mar 15**
★	**AA ……..……..**	**Mar 15**
	Project End……	Jun 15

Sponsor: CG-932

Stakeholder(s): CG-751, PAC-3

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
7930	3	Mr. Mark VanHaverbeke (860) 271-2754	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Direct Acquisition Support (MAR, MNS, CONOPS, ORD, AA, LCCE, T&E, etc.)

Notes:

★ Indicates RDC product.

Affordability in Construction of Polar Icebreaker

Mission Need: **Evaluate design considerations and construction techniques used by foreign shipyards currently building icebreakers versus techniques used by U.S. shipyards with respect to the cost savings they create during construction.**

Project Objectives:

- Assess construction techniques used by foreign shipyards currently building icebreakers versus techniques used by U.S. shipyards.
- Evaluate their potential for cost savings and feasibility for use by U.S. shipyards.
- Evaluate current icebreaker designs for potential Coast Guard application.

On Hold

Key Milestone / Deliverable Schedule:

Project Start	Nov 13
Investigate Shipyards	Apr 14
Meet with Shipyards	Mar 14
Rough Draft Development	Aug14
CG Headquarters Review	Oct 14
★ **RDC Report Affordability in Construction**	**Feb 15**
Project End	Mar 15

Sponsor: CG-932

Stakeholder(s): CG-45, SFLC

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
9503	3	Mr. Scot Tripp (860) 271-2680	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Direct Acquisition Support (MAR, MNS, CONOPS, ORD, AA, LCCE, T&E, etc)

Notes:

★ Indicates RDC product.

Seakeeping vs. Ice Breaking Capability

Mission Need: Icebreaker hulls optimized for both seakeeping and icebreaking.

Project Objectives:

- Identify hull design characteristics that will provide optimal seakeeping and icebreaking.
- Develop a report for icebreaker hull optimization that makes recommendations on a path forward for future acquisitions.

On Hold

Key Milestone / Deliverable Schedule:

Project Start	Nov 13
Perform Icebreaker Hull Research	Nov 13
★ **Icebreaker Hull Optimization Study**	**Jul 14**
Project End	Aug 14

Sponsor: CG-923
Stakeholder(s): CG-751

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
9504	3	Mr. Jason Story (860) 271-2833	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Inform follow-on acquisition/enterprise deployment

Notes:

★ Indicates RDC product.

CPB Sustainment Program Business Case Analysis

Mission Need: Determine the cost effectiveness of extending the 87' Coastal Patrol Boats (CPBs) past their design service life and the tradeoffs associated with pursuit of a new acquisition.

Project Objectives:

- Develop a Business Case Analysis (BCA) that clearly defines the costs, risks, and critical information associated with maintaining the existing fleet, acquiring a new CPB fleet, or some bridging strategy that combines the two.
- The BCA will identify, assess, and address the following:
  - Sustainment options for the 87' CPB fleet,
  - Acquisition options for replacement assets,
  - The risks associated with each option, and
  - A recommendation for future sustainment projects for the 87' CPB fleet or a new acquisition program.

Key Milestone / Deliverable Schedule:

Project Start	Dec 13
Sustainment Analysis	Apr 14
Acquisition Analysis	Jun 14
Risk Analysis	Jul 14
Draft Report/Stakeholder Summit	Jul 14
★ **87' Coastal Patrol Boat (CPB) Sustainment Program Business Case Analysis (BCA)**	**Oct 14**
Project End	Nov 14

Sponsor: CG-451

Stakeholder(s): SFLC, CG-751

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
9506	3	LCDR Dave Gudbrandsen (860) 271-2893	LT Derek Storolis (202) 475-3492

Expected Benefit:

Inform follow-on acquisition/enterprise deployment

Notes:

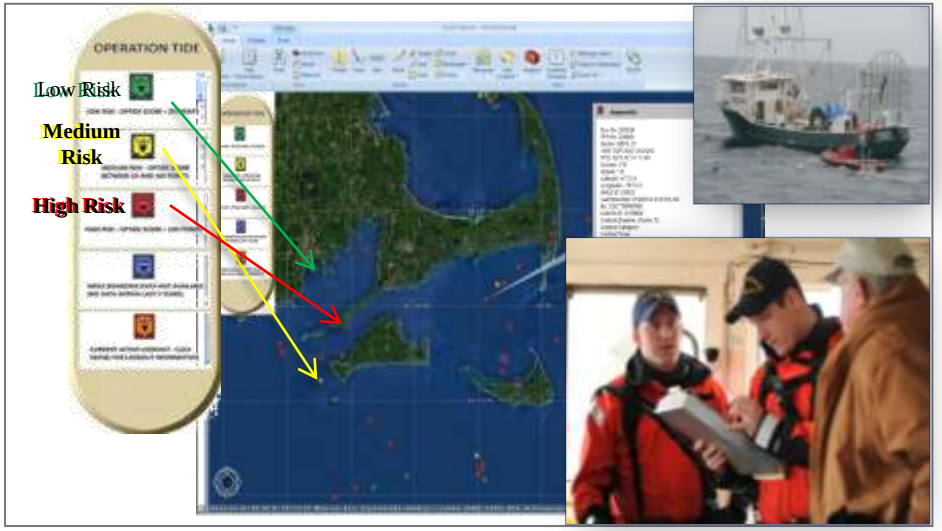
★ Indicates RDC product.

Independent Assessment of OPTIDE and Road Ahead

Mission Need: Real-time, risk-based tool to target fishing vessels in violation of fishing regulations.

Project Objectives:

- Review Operational and Tactical Information Driving Enforcement (OPTIDE) tool currently being used by CG District One.
- Review the Decision OPTIDE (DeOPTIDE) and Rule Induction Tactical Information Driving Enforcement (RIPTIDE) alternative technical approaches.
- Verify the intended use/needs and requirements for the tool.
- Determine if the tool concept and data used are appropriate, sound, and suitable for meeting the requirements.
- Determine if the design, implementation, and results of the tool allow the requirements to be met.
- Determine approach and costs to implement.



Key Milestone / Deliverable Schedule:

Project Start	Nov 13
Phase I	
Assess the Current OPTIDE "As is"	Mar 14
Key Decision Point (KDP) on Applicability Across Districts	Jun 14
Assess the RIPTIDE and DeOPTIDE Variants	Aug 14
★ **Recommendation for OPTIDE Design**	**Aug 14**
KDP on Phase II	Aug 14
★ **Roadmap for OPTIDE Implementation**	**Nov 14**
Phase II	
Specifications for OPTIDE and System Development Life Cycle (SDLC) Documents	Apr 15
★ **OPTIDE Specifications Document**	**Oct 15**
Project End	Nov 15

★ Indicates RDC product.

Sponsor: CG-MLE

Stakeholder(s): Districts, Sectors, Command Centers

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-11	3	Ms. Kathleen Kettel (860) 271-2770	LT Derek Storolis (202) 475-3492

Expected Benefit:

Inform follow-on acquisition/enterprise deployment

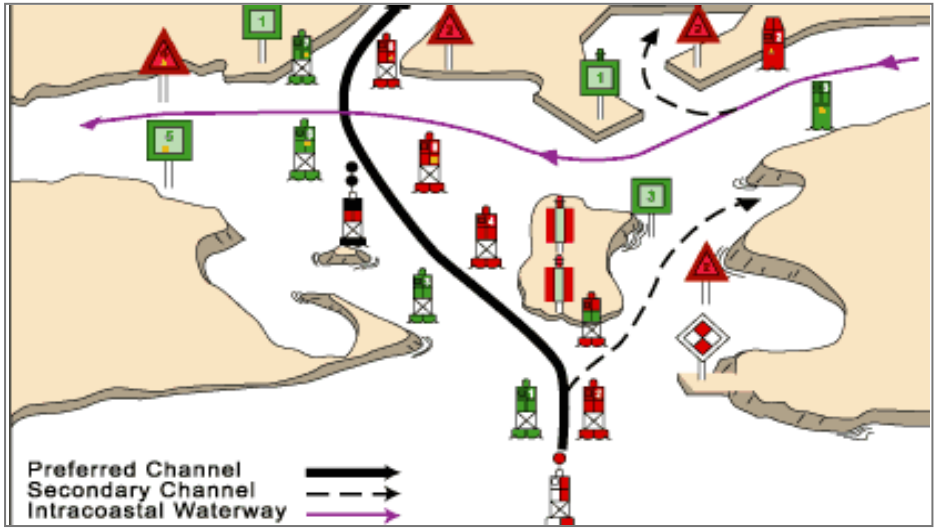
Notes:

Navigation 2025 Prototype Implementation

Mission Need: **A design, implementation, and analysis of a new 21st Century Aids to Navigation System (one that is heavily based on electronic navigation capabilities and less on physical aids) within two U.S. ports/ waterways.**

Project Objectives:

- Conduct initial business case for a spatial waterways design capability per System Development Life Cycle (SDLC) process.
- Analyze alternatives for modernized Western Rivers waterway designs.
- Prepare for Design Phase of Navigation 2025 – Prototype Implementation project.



Key Milestone / Deliverable Schedule:

	Project Start …….….....	26 Jul 12 ✓
	Conduct Initial Business Case……..	31May 13 ✓
★	**Nav 2025 - Initial Business Case for a Waterways Design and Spatial Analysis Capability……**	**31 Jul 13 ✓**
	Analyze Alternatives for Western Rivers……	30Aug 13 ✓
★	**Nav 2025 – Analysis of Alternatives for Waterway Designs on the Western Rivers ……..…….. **	**13 Sep 13 ✓**
	Project End ……..……	Oct 13

Sponsor: CG-NAV

Stakeholder(s): DOT (VOLPE), USACE

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2301	3	Mr. Warren Heerlein (860) 271-2625	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Support of Nav 2025 is anticipated to last 5 or more years.

Partnering with U.S. Army Corps of Engineers (USACE).

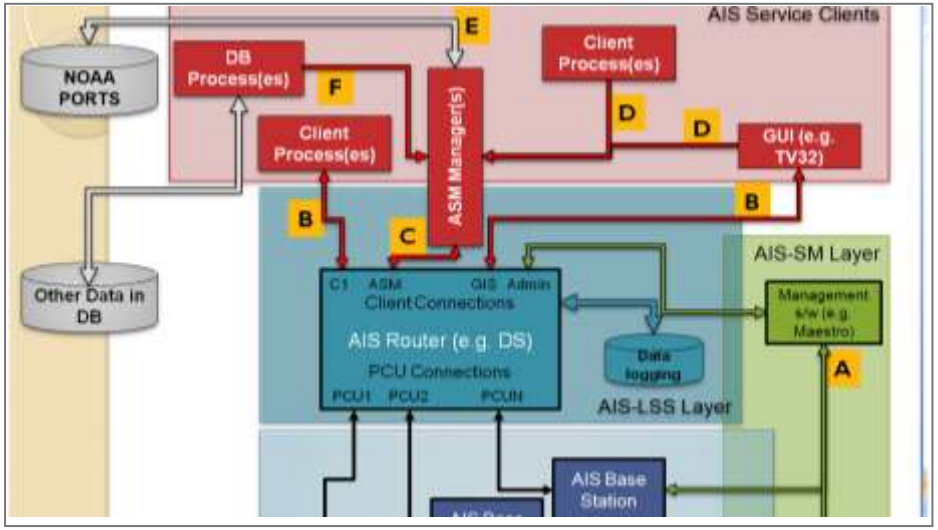
★ Indicates RDC product.

AIS Transmit Capability

Mission Need: Investigation and evaluation of the Automatic Identification System (AIS) transmit capability.

Project Objectives:

- Investigate requirements of users (government and commercial) for AIS binary message transmit.
- Evaluate the effectiveness of information disseminated from CG Vessel Traffic Services (VTS) and other providers.
- Demonstrate and develop AIS binary message transmit capability.



Key Milestone / Deliverable Schedule:

	Project Start	2 May 07 ✓
★	**Input Paper to International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) eNav9 on AIS Application Specific Messages (ASM)**	**17 Mar 11 ✓**
★	**Input Paper on AIS ASMs to International Maritime Organization (IMO) Nav57**	**11 Apr 11 ✓**
★	**Transition Plan for Tampa**	**8 Sep 11 ✓**
★	**Operational Framework for AIS Transmit**	**10 Sep 12 ✓**
★	**AIS ASM Operational Implementation Plan**	**20 Aug 13 ✓**
★	**AIS Transmit Testing in Louisville Phase 2**	**Aug 14**
★	**System Development Life Cycle (SDLC) Package (Design and Development)**	**Sep 14**
	Project End	Dec 16

★ Indicates RDC product.

Sponsor: CG-NAV, CG-761

Stakeholder(s): CG-741

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2413	3	Ms. Irene Gonin (860) 271-2694	CDR Tung Ly (202) 475-3011

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

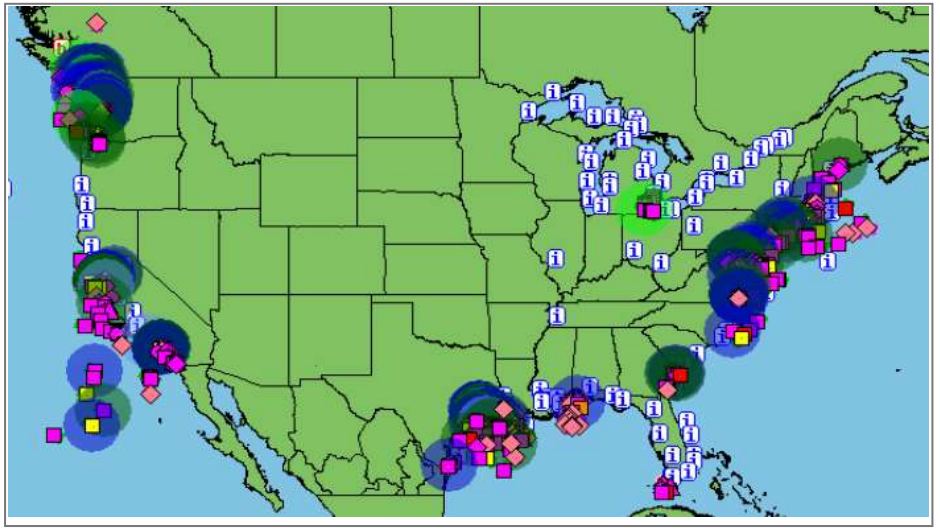
Notes:

NAIS Technical Forum and Performance Analysis Support

Mission Need: **A review of and modification to international standards, assistance conducting VHF Data Link (VDL) integrity monitoring and analysis, and support for sustainment of the Nationwide Automatic Identification System (NAIS) network.**

Project Objectives:

- Advocate U.S. Government interests in standards development.
- Provide project sponsor with VDL integrity monitoring and analysis critical to maintaining the integrity of NAIS.
- Provide the expertise and capabilities needed to support and sustain the NAIS, and support integration of the Interim Receive (IR) and Permanent Transceive (PT) networks.



Key Milestone / Deliverable Schedule:

	Project Start	05 Dec 08 ✓
	Attend AIS Standard Committee Meetings	Oct 08–Sep 13
	Delivered 24 Prior Year Products	
★	**Port Ambrose Traffic Study**	**22 Jul 13 ✓**
★	**Class B AIS Detection Study**	**26 Aug 13 ✓**
★	**Technical Inputs to NMEA 2000 v2.0 Standard**	**16 Sep 13 ✓**
★	**Technical Inputs to IEC 61162-1 Interface Std**	**17 Sep 13 ✓**
★	**Interim Report: VDL Analysis using New Long Range AIS Instrumentation**	**26 Sep 13 ✓**
★	**NAIS Sustainment Transition Plan**	**Jun 14**
★	**Technical Inputs to NMEA 2000/OneNet/0183 Std**	**Sep 14**
★	**Technical Inputs to IEC Interface and AIS Std**	**Sep 14**
★	**NAIS VDL Transmit Monitoring and Analysis**	**Sep 14**
★	**Follow-on Report: VDL Analysis using New Long Range AIS Instrumentation**	**Sep 14**
	Project End	Dec 14

★ Indicates RDC product.

Sponsor: CG-761

Stakeholder(s): CG-933, CG-652, OSC, NAVCEN, C3CEN

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2419	3	Mr. Lee Luft (860) 271-2685	CDR Tung Ly (202) 475-3011

Expected Benefit:

Influence international standards

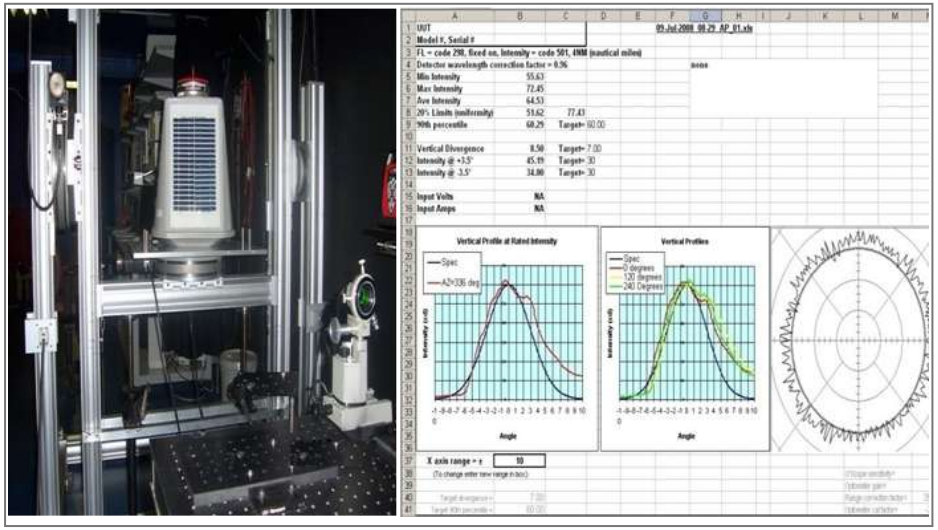
Notes:

General Engineering Laboratory Support (GELS)

Mission Need: Test and Evaluation of Aids to Navigation (AtoN) to improve performance, lower costs and extend maintenance intervals.

Project Objectives:

- Provide a laboratory and test and evaluation services in support of the CG AtoN program.
- Conduct test and evaluation of AtoN to ascertain conformance with established regulatory and certification criteria.
- Evaluate the viability of emerging technologies to reduce CG operating/maintenance costs or alleviate (AtoN signal) problem areas.



Key Milestone / Deliverable Schedule:

	Project Start…….…….	circa 72 ✓
★	**Ongoing Project, Historically 2-3 Deliverables/Year**	✓
★	**GELS FY13 Activity Summary 3rd and 4th Qtr ……... 25 Sep 13**	✓
★	**GELS FY14 Activity Summary 1st and 2nd Qtr …… Apr 14**	
★	**GELS FY14 Activity Summary 3rd and 4th Qtr …….. Sep 14**	
	Project End…….....	TBD

Sponsor: CG-43

Stakeholder(s): SILC Miami

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2784	3	Mr. Vinnie Reubelt (860) 271-2661	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:

Use of RDC's Light Evaluation Laboratory capable of measuring light intensity and chromaticity.

★ Indicates RDC product.

Command Center Capability Analysis Support

Mission Need: A comprehensive understanding of the essential /core set of Command Center (CC) capabilities.

Project Objectives:

- Phase 1: Establish a set of "baseline" (core) CC capability requirements.
- Phase 2: Use capability requirements to perform "current state" assessment for two CC missions.

Key Milestone / Deliverable Schedule:

	Project Start	3 Apr 12 ✓
	Draft Capabilities Framework (2 missions)	28 Jun 12 ✓
★	**Command Center Capability Framework**	**3 Oct 12 ✓**
	Begin Phase 2	6 Feb 13 ✓
	Mission 1: Field Assessment of Current State	20 May 13 ✓
	Mission 2: Field Assessment of Current State	Jun 13
★	**Assessing the Current State of CC Operations**	**Oct 13**
	Project End	Oct 13

Sponsor: CG-741

Stakeholder(s): CG Sectors, Districts

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
3402	3	Dr. Anita Rothblum (860) 271-2847	Mr. Jaurin Joseph (202) 475-3493

Expected Benefit:

Improved Doctrine/CONOPs/TTPs

Notes:

★ Indicates RDC product.

Maritime Trace Narcotic Identification/Verification

Mission Need: Narcotic Identification/Verification (ID/V) capabilities to meet National Drug Control Strategy (NDCS) performance goals.

Project Objectives:

- Provide boarding team members a more effective and efficient narcotic identification/validation capability for use during maritime counterdrug missions.

Key Milestone / Deliverable Schedule:

	Project Start	6 Jun 11 ✓
★	**Maritime Trace Narcotics Detection Key Performance Parameters (KPP) and Devices**	**16 May 12 ✓**
	Key Decision Point (Go/No-Go Phase I to Phase II)	18 Jun 12 ✓
	Begin Field Deployment Testing	9 Aug 13 ✓
★	**Maritime Trace Narcotics ID/V Capability Report**	**Dec 13**
	Project End	Jan 14

Sponsor: CG-MLE

Stakeholder(s): CG-761

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
5802	3	Mr. Brian Dolph (860) 271-2817	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc

Notes:

Funded by Office of National Drug Control Policy (ONDCP).

★ Indicates RDC product.

Homeport Internet Portal (HIP) Transition Analysis

Mission Need: A sustainable communication method for sharing security information with the public, CG partners and maritime stakeholders IAW the Maritime Transportation Security Act.

Project Objectives:

Conduct an Alternatives Analysis that includes:

- A current state analysis of the Homeport Portal.
- Alternatives to the Homeport Portal.
- Present life cycle costs, benefits and risks of the alternatives.
- A recommendation for transition based on sustainability.

Key Milestone / Deliverable Schedule:

	Project Start	19 Jun 13 ✓
	Alternative Architectures	Dec 13
	Decision Matrix	Feb 14
	Alternative Recommendations	Apr 14
★	**Homeport Transition Recommendation**	**May 14**
	Project End	Jun 14

Sponsor: CG-761

Stakeholder(s): CG-FAC, CG-5, CG-7, CG-DCO

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
7931	3	Ms. Kathleen Shea Kettel (860) 271-2770	LT Derek Storolis (202) 475-3492

Expected Benefit:

Inform follow-on acquisition/enterprise deployment

Notes:

★ Indicates RDC product.

Improved In-Situ Burning (ISB) for Offshore Use

Mission Need: Better decision and operational tools for using ISB as a response option.

Project Objectives:

- Identify any capabilities gap that industry is not addressing.
- Determine best practices for operational use of ISB.
- Develop new equipment and procedures to support ISB.

Key Milestone / Deliverable Schedule:

	Project Start	Mar 14
★	**Preliminary Assessment**	**Sep 14**
	Optional Burn Testing (if needed)	Nov 14
★	**Burn Testing Results**	**Jan 15**
★	**Results of Technology Enhancements**	**Mar 16**
	Project End	Apr 16

Sponsor: CG-MER

Stakeholder(s): BSEE, NOAA

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2013-49	3	Mr. Kurt Hansen (860) 271-2865	Mr. Shannon Jenkins (202) 475-3490

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Funding anticipated from the Bureau of Safety and Environmental Enforcement (BSEE).

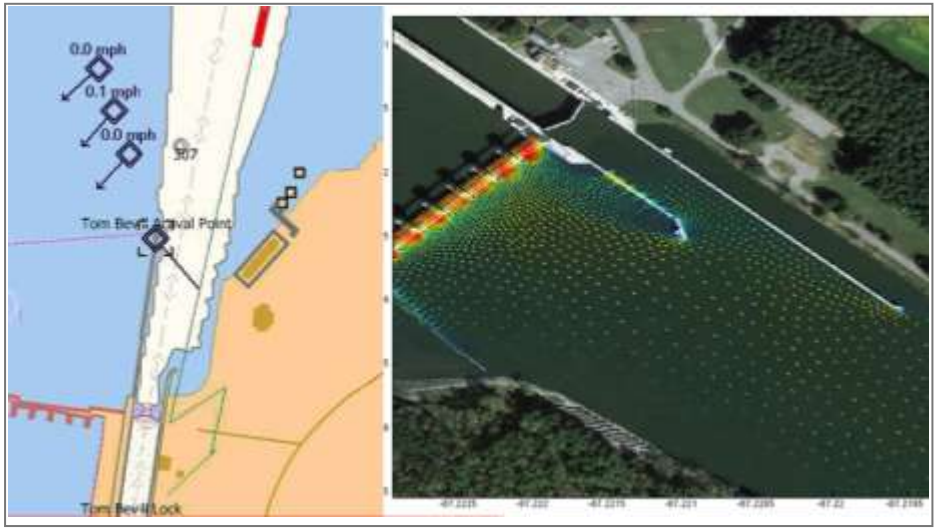
★ Indicates RDC product.

USACE AIS Transmit

Mission Need: Development and use of e-Navigation (eNav) on Western Rivers.

Project Objectives:

- Determine and implement the most effective method to transmit Automatic Identification System (AIS) messages to mariners using existing CG and USACE systems and infrastructure.
- Develop capabilities that can be incorporated into or used with the USACE Lock Operations Management Application (LOMA) system to transmit various navigation data via the AIS system.
- Transmit eNav information using USACE AIS Aids to Navigation (AtoN) on the Western Rivers.



Key Milestone / Deliverable Schedule:

	Project Start	5 Sep 13 ✓
	Determine Test Bed Sites	Oct 13
	Design Interfaces and Install Test Bed	Feb 14
★	**USCG AIS Transmit Testing for USACE Summary Report....**	**Sep 14**
	Project End	Oct 14

Sponsor: USACE, USAERDC

Stakeholder(s): CG-5PW, CG-NAV

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2431	3	Ms. Irene Gonin (860) 271-2694	CDR Tung Ly (202) 475-3011

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Funded by U.S. Army Corps of Engineers (USACE).

Specifically focused AIS transmit work.

Follow-on to Project 2413 and 2014-3.

★ Indicates RDC product.

GLRI BWT Shipboard Approval Tests

Mission Need: Capability to verify that Ballast Water Treatment (BWT) systems installed aboard ships meet discharge standards.

Project Objectives:

- Develop methodology and test protocols for approval/certification testing of BWT systems aboard ships.
- Coordinate with CG-OES-3 and Maritime Administration (MARAD) to test BWT system aboard Laker.
- Compare filter skid performance against plankton net in soft-bodied organism environment.
- Evaluate BWT system in fresh water.

Key Milestone / Deliverable Schedule:

	Project Start	10 Jan 11 ✓
★	**Generic Protocol for Filtration Skid**	**8 Jun 12 ✓**
	Begin Shipboard Tests	26 Jul 12 ✓
★	**Validation of Filtration Skid During Land-Based & Shipboard Tests**	**12 Oct 12 ✓**
	Key Decision Point to Pursue Fourth Test	25 Sep 13 ✓
★	**Results of Shipboard Approval Tests of Ballast Water Treatment Systems in Freshwater**	**Jun 14**
	Project End	Jul 14

Sponsor: CG-OES

Stakeholder(s): USEPA-GLNPO

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
41012	3	Mr. Chris Turner (860) 271-2623	Mr. Jaurin Joseph (202) 475-3493

Expected Benefit:

Improved Doctrine/CONOPs/TTPs

Notes:

Funded by Great Lakes Restoration Initiative (GLRI).

★ Indicates RDC product.

Shipboard Compliance of Ballast Water Discharge Standards (BWDS)

Mission Need: The tools to quickly and reliably determine vessel compliance with the BWDS.

Project Objectives:

- Determine the availability and capabilities of existing technologies that could be utilized for compliance verification of the BWDS.

Key Milestone / Deliverable Schedule:

	Project Start …….……	12 Jan 11 ✓
★	**Proceedings of Ballast Water Discharge Standards Compliance SME Workshop……**	**7 Sep 11 ✓**
★	**Market Research Assessment: Verification Technologies for BWDS Compliance……..……**	**17 Oct 12 ✓**
	Prototype Development of Compliance Tools…….....	Nov 14
★	**Independent Field Testing of Prototype Verification Tools ..**	**Apr 15**
★	**Correlation of Indirect Measures and Organism Densities…**	**May 15**
★	**Compliance Tool Transition Plan……..…**	**May 16**
	Project End……..……....	Jun 16

★ Indicates RDC product.

Sponsor: CG-OES

Stakeholder(s): USEPA-GLNPO, CG-CVC

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
410131	3	Ms. Gail Roderick (860) 271-2658	Mr. Jaurin Joseph (202) 475-3493

Expected Benefit:

Add to general R&D knowledge base

Notes:

Funded by Great Lakes Restoration Initiative (GLRI).

Develop CG Guidance to Verify Ballast Water Discharge Standards (BWDS) Compliance

Mission Need: Procedures to verify federal BWDS.

Project Objectives:

- Provide guidance on how CG marine inspection teams will enforce the ballast water management regulations to prevent the spread of nonindigenous species in concert with their other Marine Safety and Marine Environmental Protection responsibilities.

Key Milestone / Deliverable Schedule:

Project Start	15 Dec 11	✓
Background History and Ballast Water Treatment (BWT) Requirements	18 Dec 12	✓
Identify Existing Technology Solutions	17 Sep 12	✓
Develop Draft Navigation and Vessel Inspection Circular (NVIC)	2 Aug 13	✓
★ **Guidance to Verify Ballast Water Discharge Standards Compliance**	**Oct 13**	
Project End	Nov 13	

Sponsor: CG-CVC

Stakeholder(s): CG-OES, USEPA-GLNPO

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
410132	3	Mr. Chris Turner (860) 271-2623	Mr. Jaurin Joseph (202) 475-3493

Expected Benefit:

Improved Doctrine/CONOPs/TTPs

Notes:

Funded by Great Lakes Restoration Initiative (GLRI).

★ Indicates RDC product.

Analysis Support for the Mandated Periodic Practicability Reviews of Ballast Water Standards

Mission Need: To determine the practicability of implementing Ballast Water Discharge Standards (BWDS) more stringent than the current standards.

Project Objectives:

- Develop a plan for determining the practicability of implementing more stringent ballast water discharge standards.
- Conduct a practicability review that examines all aspects of the prevailing ballast water management program requirements, standards, and assess the program's effectiveness in preventing invasions.

Key Milestone / Deliverable Schedule:

	Project Start…….……...	28 Jan 13 ✓
	Phase I: BWDS Practicability Planning Meeting……..……..	Mar 14
	KDP: Conduct BWDS Practicability Review……..	May 14
★	**BWDS Practicability Review Plan……...……**	**Aug 14**
	Phase II: A: Determine Detection Limits of Testing Protocols…	Sep 14
	Phase II: B: Determine Thresholds of Treatment Technologies...	Sep 14
	Phase II: C: Determine Integration into Ships' Ops Regime……	Feb 15
★	**BWDS Practicability Review……**	**May 15**
	Project End……	Jul 15

Sponsor: CG-OES

Stakeholder(s): USEPA - GLNPO

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
410133	3	Ms. Gail Roderick (860) 271-2658	Mr. Jaurin Joseph (202) 475-3493

Expected Benefit:

Add to general R&D knowledge base

Notes:

Funded by Great Lakes Restoration Initiative (GLRI).

★ Indicates RDC product.

Ballast Water Management System (BWMS) Scalability Impacts to Type Approval Tests

Mission Need: The ability to predict the performance of a large BWMS based on the testing of a smaller model.

Project Objectives:

- Collect and consolidate information about scaling up different key ballast water management systems through a desktop literature review.
  - Solicit independent advice from experts in water/wastewater field as their technologies are similar to that of the ballast water field.
  - Seek out industry representatives in ballast water management systems.
  - Review academic researches and analyze findings.
- Develop Final Guidance Document for type-approval in terms of scaling for the customer based on comments and feedback on Interim Guidance Document.

Key Milestone / Deliverable Schedule:

	Project Start	Nov 13
	Perform Literature Review of Key Treatment Technologies	May 14
★	**Interim Guidance Document**	**May 14**
	Comments and Review Period	Jun 14
★	**Final Guidance Document**	**Sep 14**
	Project End	Nov 14

Sponsor: CG-OES

Stakeholder(s): USEPA-GLNPO, CG-ENG

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
410134	3	Mr. Alexander Balsley (860) 271-2854	Mr. Jaurin Joseph (202) 475-3493

Expected Benefit:

Add to general R&D knowledge base

Notes:

Funded by Great Lakes Restoration Initiative (GLRI).

★ Indicates RDC product.

Acquisition Directorate

Research, Development, Test & Evaluation

FY14 Project Portfolio

Additional R&D Opportunities

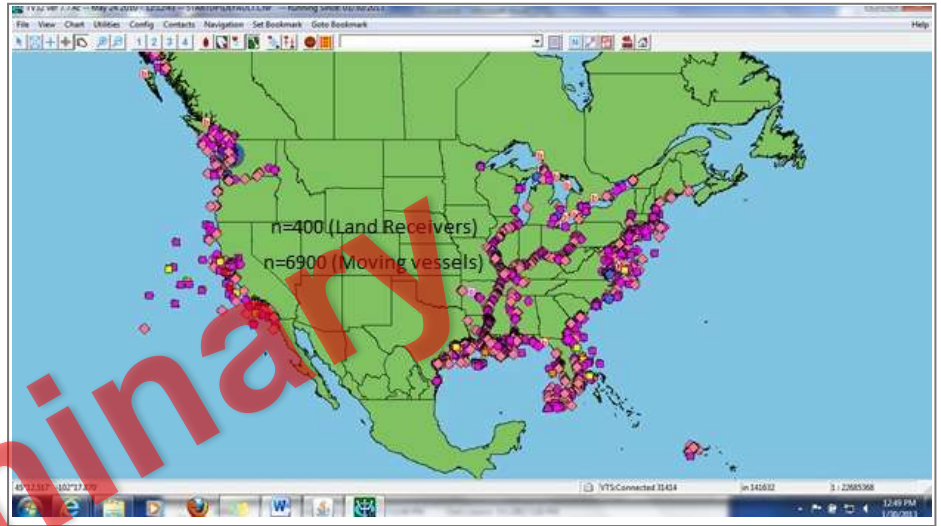
CG R&D Center

CYBER Defense for Maritime Position Navigation and Timing

Mission Need: Maritime navigation and CG situation awareness relies on effective Position Navigation and Timing (PNT) and Automatic Identification System (AIS) despite Denial of Service (DOS), or deliberate spoofing of GPS and AIS.

Project Objectives:

- Investigate and develop methods to identify GPS outages and signal interference based upon information available from existing systems (NAIS and DGPS monitoring). The methods should be able to identify both local and broad geographic area GPS issues.
- Investigate and develop methods to detect intentional deception (spoofing) of the GPS and AIS signals.
- Investigate and develop mitigation technologies and strategies to prevent interference, jamming and spoofing of commercial navigation receivers. Implement recommendations through equipment standards development.



Key Milestone / Deliverable Schedule:

	Project Start …..……	TBD
	Initial Exploitation Characteristics of PNT System……	TBD+6 Mos.
★	**Investigation Findings on Monitoring Method(s)……**	**TBD+6 Mos.**
	Research Spoofing Methods……..……....	TBD+12 Mos.
	Develop and Test Mitigation Strategies……...	TBD+18 Mos.
	Bench Test Automated Notification Tool……	TBD+18 Mos.
★	**Prototype Automated Notification Tool Report..……**	**TBD+20 Mos.**
★	**Implement Mitigation Strategies…….....**	**TBD+36 Mos.**
	Project End…..……	TBD+36 Mos.

Sponsor: CG-CYBER

Stakeholder(s): CG-NAV, CG-761

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-27	3	Mr. Jay Spalding (860) 271-2687	CDR Tung Ly (202) 475-3011

Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc

Notes:

Cooperative work with CG Academy GPS simulator.

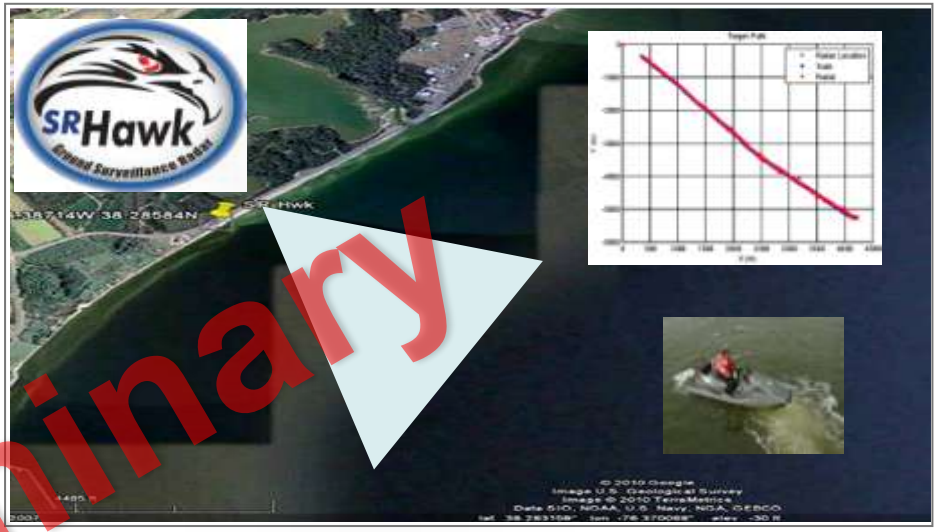
★ Indicates RDC product.

Persistent Surveillance Using Land, Marine and Overlapping Mobile and EOIR Sensor Systems

Mission Need: Technologies to assist CG with effective Tasking, Collection, Processing, Exploitation, and Dissemination (TCPED) cycle.

Project Objectives:

- Investigate the possibility of using Joint Strategic Targeting and Acquisition Radar System (JSTARS) with the SRHAWK radar system and slave Electro-Optic Infra-Red (EOIR) system.
- Secure the U.S. Maritime Domain using persistent surveillance sensors that are networked with DoD, CG, and Customs and Border Protection (CBP) assets.
- Report on improved characterization of behavior patterns for effects based operations.



Key Milestone / Deliverable Schedule:

Project Start	TBD
Define Performance Objectives	TBD+2 Mos.
Develop Test and Evaluation (T&E) Plan	TBD+5 Mos.
Obtain Interim Authority to Test (IATT)	TBD+7 Mos.
Coordinate & Install Equipment for Test	TBD+7 Mos.
Conduct Demonstration	TBD+8 Mos.
★ **Improvements to Effects-Based Operations**	**TBD+9 Mos.**
Project End	TBD+10 Mos.

Sponsor: CG-761

Stakeholder(s): JTF-N, PAC-5, D11

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-31	3	Ms. Judi Connelly (860) 271-2643	CDR Tung Ly (202) 475-3011

Expected Benefit:

Improve operational performance/efficiency/mission/execution

Notes:

Timeline is dependent on JSTARS training schedule. This schedule assumes JSTARS availability in June 2014.

★ Indicates RDC product.

Lighting Assessment for the Bridge on Coast Guard Cutters

Mission Need: The ability to effectively maintain dark adaptation on the bridge of Coast Guard cutters.

Project Objectives:

- Measure and understand the lighting problems on the Bridge of CG Cutters/ Ships.
  - Increased light levels from computer screens and indicator lights disrupt dark adaptation.
  - Light reflected onto the bridge window obscures view of dark waterway.
- Determine whether existing solutions (e.g., Navy) could be implemented on CG cutters.

Key Milestone / Deliverable Schedule:

Project Start	TBD
Contract in Place	TBD+3 Mos.
Cutter Visits Completed	TBD+8 Mos.
★ **Lighting Recommendations for the Bridge**	**TBD+12 Mos.**
Project End	TBD+13 Mos.

Sponsor: CG-1B3

Stakeholder(s): CG-751, PAC-7

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2012-38	3	Dr. Anita Rothblum (860) 271-2847	Mr. Jaurin Joseph (202) 475-3493

Expected Benefit:

Add to general R&D knowledge base

Notes:

★ Indicates RDC product.

Technology Demonstration–Tethered Aerial Surveillance System (TASS)

Mission Need: Mobile aerial platform deployable from shore or small boat that extends sensor range to monitor and detect threats in real time and enhance situational awareness beyond visual horizon.

Project Objectives:

- Research unique maritime operational requirements, e.g., robust, man-portable, dynamic underway setting, day/ night, moderate weather, sensor performance, human factors, Federal Aviation Administration approval.
- Identify developments by government/industry (e.g., IN-Q-TEL) – conduct technical exchange(s) to evaluate possible solutions.
- Design preliminary concept to support technical demonstration.
- Conduct preliminary demonstration of select technologies.
- Prepare Research and Analysis Report and Annotated Briefing.

Key Milestone / Deliverable Schedule:

Project Start	TBD
Research/Technical Exchange Briefing	TBD+5 Mos.
Preliminary Concept Design Key Decision Point	TBD+8 Mos.
Preliminary Technology Demonstration	TBD+11 Mos.
★ **Technology Demonstration-TASS Report**	**TBD+17 Mos.**
Project End	TBD+19 Mos.

Sponsor: CG-761

Stakeholder(s): District, Sector (re), Deployable Special Forces

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-24	3	Mr. Wayne Buchanan (860) 271-2759	CDR Tung Ly (202) 475-3011

Expected Benefit:

Improve Operational Performance/Efficiency/Mission Execution/Resiliency

Notes:

Collaboration and technical exchange with DHS Science and Technology Directorate (S&T), Borders and Maritime Division (BMD) – Remote Aircraft for Public Service (RAPS) Project.

★ Indicates RDC product.

Portable Maritime Explosive Detection/Identification

Mission Need: Additional detection/identification of explosives capability for Advance Interdiction (AI) Teams.

Project Objectives:

- Identify/develop small, portable, lightweight explosives detection capabilities for AI Teams to augment existing Canine Explosive Detection Teams (CEDT).

Key Milestone / Deliverable Schedule:

Project Start	TBD
DHS S&T/TSWG/CG Stakeholders Workgroup	TBD+3 Mos.
Detailed Requirements to DHS S&T/TSWG	TBD+6 Mos.
DHS S&T/TSWG Broad Agency Announcement (BAA) Issued	TBD+8 Mos.
DHS S&T/TSWG Funded Development Begins	TBD+11 Mos.
Technology Transition Agreement Signed	TBD+14 Mos.
AI Field Demonstrations	TBD+19 Mos.
Prototype to Production	TBD+22 Mos.
★ **CG AI Team Explosives Detection Capability**	**TBD+24 Mos.**
Project End	TBD+25 Mos.

★ Indicates RDC product.

Sponsor: CG-DOD
Stakeholder(s): MSRT

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-13	3	Mr. Brian Dolph (860) 271-2817	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Leverage DHS Science and Technology (S&T) Explosive Detection Program and/or DoD Technical Support Group (TSWG) as appropriate following Stakeholders Workgroup Requirements Development.

Coast Guard Break-Away Timer

Mission Need: Capability to identify ship operators involved in Aids to Navigation (ATON) allisions resulting in significant financial loss for CG due to buoy repairs and replacements.

Project Objectives:

- Conduct research into past incidents and document requirements. Conduct market research into potential technologies.
- Develop and test a proof-of-concept device that can be installed on smaller foam aids with mooring chains in locations that are prone to parting upon impact.
- Ensure that the timer device is capable of recording the amount of time from impact to recovery of buoy.

Key Milestone / Deliverable Schedule:

	Project Start	TBD
★	**Market Research Assessment: Break-Away Timers**	**TBD+3 Mos.**
	Develop Proof-of-Concepts	TBD+11 Mos.
	Test Proof-of-Concepts at Field Location	TBD+21 Mos.
★	**Test Results Final Report**	**TBD+25 Mos.**
	Project End	TBD+28 Mos.

Sponsor: CG-NAV

Stakeholder(s):

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-1	3	Mr. Alexander Balsley (860) 271-2854	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

★ Indicates RDC product.

Migrant Identification/Accountability Bracelet

Mission Need: Accountability for migrants aboard Coast Guard vessels.

Project Objectives:

- Conduct alternatives analysis for tracking systems that allow crew members to track and monitor migrants while aboard Coast Guard vessels.
- Based on analysis and Test and Evaluation (T&E) results, provide a report recommending threshold and objective criteria for a migrant tracking system that will increase the accountability of migrants while they are transported to shore.
- Deliver Department of Defense Architecture Framework (DODAF) artifacts to support acquisition & implementation.
- Identify possible integration with shore-based systems for purposes of hand-off.

Key Milestone / Deliverable Schedule:

	Project Start	TBD
★	**Technical Analysis of Alternative Tracking Technologies Report**	**TBD+5 Mos.**
★	**Annotated Briefing with Go/No-Go decision to Test and Evaluate Selected System(s)**	**TBD+8 Mos.**
	Complete Field Test and Evaluation	TBD+14 Mos.
★	**Report T&E Results**	**TBD+16 Mos.**
★	**DODAF Artifacts**	**TBD+19 Mos.**
	Project End	TBD+20 Mos.

Sponsor: CG-MLE

Stakeholder(s): D7, LANTAREA

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-5	3	LT Mike Grochowski (860) 271-2816	CDR Tung Ly (202) 475-3011

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

★ Indicates RDC product.

Investigation of Dockside Sources for Ballast Water

Mission Need: Determine if dockside water is a viable option for ships needing to meet the Ballast Water Discharge Standard (BWDS) specified in 33 CFR 151 subparts C and D.

Project Objectives:

- Inventory, categorize, and characterize available dockside water in representative ports around the world.
- Assess the acceptability of such water as ballast water under U.S. and international regulations.

Key Milestone / Deliverable Schedule:

Project Start	TBD
Clarify Scope of Effort	TBD+1 Mos.
Develop Statement of Work	TBD+2 Mos.
Award Task Order Vehicle	TBD+4 Mos.
★ **Dockside Sources for Ballast Water**	**TBD+11 Mos.**
Project End	TBD+12 Mos.

Sponsor: CG-OES

Stakeholder(s):

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-8	3	Mr. M. J. Lewandowski (860) 271-2692	Mr. Jaurin Joseph (202) 475-3493

Expected Benefit:

Influence international standards

Notes:

★ Indicates RDC product.

Develop an Environmentally Friendly Buoy Mooring System

Mission Need: A buoy mooring system situated in environmentally sensitive areas that would avoid directly damaging nearby delicate plants and animals in the benthic zone.

Project Objectives:

- Conduct a market research to determine alternatives to traditional buoy mooring systems.
- Develop and test prototypes and acquire final report to determine best available technology for environmentally sensitive areas.

Key Milestone / Deliverable Schedule:

	Project Start	TBD
	Conduct Market Research	TBD+4 Mos.
	Brief Market Research Results to Sponsor	TBD+6 Mos.
	Key Decision Point to Determine if Broad Agency Announcement (BAA) is Needed	TBD+6 Mos.
	Issue BAA	TBD+7 Mos.
★	**Prototype Design Report**	**TBD+16 Mos.**
	Prototype Testing	TBD+26 Mos.
★	**Prototype Final Report**	**TBD+41 Mos.**
	Project End	TBD+42 Mos.

Sponsor: CG-5PW

Stakeholder(s): D7 (DPW), CG-MLE, CG-432

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2013-14	3	Mr. Alexander Balsley (860) 271-2854	Mr. Jaurin Joseph (202) 475-3493

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

BAA is anticipated.

★ Indicates RDC product.

Investigation of Vessel-Generated Ballast Water

Mission Need: Determine if vessel-generated water is an option to meet Ballast Water Discharge Standards.

Project Objectives:

- Inventory, categorize, and characterize available methods for generating water on board a vessel.
- Evaluate characteristics of various types of water generated on vessels (e.g., "potable" and "technical" water) and assess their acceptability as ballast water under U.S. & international regulations.
- Investigate availability, quantity, quality (particularly regarding living organisms), cost, practicability, etc.

Key Milestone / Deliverable Schedule:

	Project Start	TBD
	Clarify Scope of Effort	TBD+1 Mos.
	Develop Statement of Work	TBD+3 Mos.
	Award Task Order Vehicle	TBD+5 Mos.
★	**Vessel Generated Ballast Water Evaluation**	**TBD+14 Mos.**
	Project End	TBD+15 Mos.

Sponsor: CG-OES

Stakeholder(s):

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-28	3	Mr. M. J. Lewandowski (860) 271-2692	Mr. Jaurin Joseph (202) 475-3493

Expected Benefit:

Influence international standards

Notes:

★ Indicates RDC product.

Cocaine Purity and Signature Test

Mission Need: More detailed field analyses to boost investigative efforts and increase awareness of maritime smuggling techniques and routes.

Project Objectives:

- The objective of this project is to create/develop a tool, for use by Boarding Team Members during maritime interdictions, capable of testing cocaine Purity, Signature (i.e., source country and processing location), and Cutting Agents (PSC/A).

Key Milestone / Deliverable Schedule:

Project Start	TBD
"Lab" Tests Converted to "Maritime/Field" Tests	TBD+9 Mos.
Begin Field Tests/User Suitability Assessment	TBD+13 Mos.
Complete Field Tests/User Suitability Assessment	TBD+18 Mos.
★ **PSC/A Kit Recommendations Report**	**TBD+22 Mos.**
Project End	TBD+22 Mos.

Sponsor: CG-MLE

Stakeholder(s):

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2013-26	3	Mr. Brian Dolph (860) 271-2817	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

★ Indicates RDC product.

Develop ARMOR Counter Drug (CD) Interdiction Patrol Patterns

Mission Need: Improve efficiency and effectiveness of CD mission patrols.

Project Objectives:

- Develop Assistant Randomized Monitoring Over Routes (ARMOR) CD to improve effectiveness and efficiency of CG CD patrols in support of Law Enforcement (LE) mission areas.
- Deliver a Final Report of the findings, results, and recommendations for the CG to conduct LE, CD patrols more effectively and efficiently.

Key Milestone / Deliverable Schedule:

Project Start	TBD
Baseline Prototype	TBD+6 Mos.
KDP Go/No-Go on Proof of Concept	TBD+6 Mos.
Model for Chosen CG Cutters in a District	TBD+8 Mos.
Model Constraints Application	TBD+11 Mos.
Brief Sponsor/Viability	TBD+12 Mos.
★ **Final Report of ARMOR CD Model**	**TBD+13 Mos.**
Project End	TBD+15 Mos.

Sponsor: CG-MLE

Stakeholder(s): LANT-7, PAC-7, D8, D1

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-4	3	Mr. Sam Cheung (860) 271-2673	LT Derek Storolis (202) 475-3492

Expected Benefit:

Improve operational performance/ efficiency/ mission execution/ resiliency

Notes:

Leverages previous/ current work such as: ARMOR Fish Patrol Schedule Model and Port Resilience Operational/ Tactical Enforcement to Counter Terrorism (PROTECT).

★ Indicates RDC product.

CD/AMIO Deterrence Metric System and Valuation Model

Mission Need: Effectiveness assessment modeling for Counter Drug (CD) and Alien Migrant Interdiction Operations (AMIO) missions.

Project Objectives:

- Identify new and expanded mission effectiveness metrics which measure the broader non-direct value of the CD or AMIO mission activities to the Coast Guard, DHS and Nation.
- Identify applicable multi-source data requirements and relationships to support metric system analytics.
- Design, build and test a proof-of-concept CD/AMIO Deterrence Metric System and Valuation Model.

Key Milestone / Deliverable Schedule:

	Project Start	TBD
	Expanded Mission Effectiveness Metrics Identified	TBD+2 Mos.
	Final Set of Data Requirements and Relationships	TBD+4 Mos.
★	**CD/AMIO Metric and Valuation Model Report**	**TBD+7 Mos.**
	Project End	TBD+8 Mos.

Sponsor: DCO-81

Stakeholder(s): LANT-73, D7

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-7	3	Mr. Craig Baldwin (860) 271-2652	LT Derek Storolis (202) 475-3492

Expected Benefit:

Improve operational performance and mission performance

Notes:

★ Indicates RDC product.

Existing Wrecks Potential Spill Response Assessment

Mission Need: Improve decision and recovery/mitigation tools for responding to oil in submerged wrecks.

Project Objectives:

- Develop decision making tools for Federal On-scene Commander (FOSC) to aid in response planning for oil in submerged vessels.
- Develop suite of hardware that can be used for assessment and mitigation, building on industry's past efforts.

Key Milestone / Deliverable Schedule:

	Project Start	TBD
★	**Tools Assessment**	**TBD+7 Mos.**
	CRADA Development	TBD+9 Mos.
	FOSC Tools Development	TBD+19 Mos.
	Project End	TBD+30 Mos.

Sponsor: CG-5RI
Stakeholder(s): NOAA

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2013-22	3	Mr. Kurt Hansen (860) 271-2865	Mr. Shannon Jenkins (202) 475-3490

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Follow on to National Oceanic and Atmospheric Administration (NOAA) assessment study.

Project includes use of a Cooperative Research and Development Agreement (CRADA).

★ Indicates RDC product.

Radio Frequency Vessel Stopping

Mission Need: Define the role of Radio Frequency (RF) vessel stopping in CG missions.

Project Objectives:

- Summarize different RF vessel stopping technologies currently available and select most promising technologies for further evaluation.
- Identify mission requirements for possible CG applications.
- Identify weight, size and power issues for selected technologies and missions.

Key Milestone / Deliverable Schedule:

Project Start……	TBD
Monitor JNLWD RF Efforts and Research ……	TBD+3 Mos.
Gather Information from the Fleet Regarding Needs …..	TBD+6 Mos.
Review JNLWD Identified Solutions for Possible CG Use..	TBD+9 Mos.
★ **Trade/Requirements Study……..…….**	TBD+12 Mos.
Project End…….……	TBD+13 Mos.

Sponsor: CG-721

Stakeholder(s): FORCECOM, PACAREA, LANTAREA, MSRT

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-16	3	Ms. D.J. Hastings (860) 271-2798	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Inform follow-on acquisition/enterprise deployment

Notes:

Partnering with Office of Naval Research (ONR) and Joint Non-lethal Weapons Directorate (JNLWD).

★ Indicates RDC product.

Covert Identification Marker

Mission Need: Coast Guard Boats need covert identification and signaling markers.

Project Objectives:

- Determine required range of visibility necessary for effective covert detection and compatibility with current CG night vision devices used on cutters and Authorized Used of Force (AUF) assets.
- Identify commercial availability through market research of technology, including criteria for positive identification settings (solid, strobe, flashing, occulting, isophase, quick, Morse).
- Develop evaluation criteria and notional Concept of Operations (CONOP), select and acquire representative samples of available technologies and conduct field test using CG operational units.
- Report on field test and provide recommendations for further development or requirements for acquiring covert identification capability.

Key Milestone / Deliverable Schedule:

Project Start	TBD
Identify Covert Identification Capability Needs	TBD+2 Mos.
Complete Market Research	TBD+4 Mos.
Complete Notional CONOPs/Test Plan	TBD+6 Mos.
Execute Field Test	TBD+8 Mos.
★ **Covert Identification Markers for USCG Pursuit Boats**	**TBD+12 Mos.**
Project End	TBD+14 Mos.

Sponsor: CG-731

Stakeholder(s): D7, SFLC/SB Prod. Line

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2014-6	3	Mr. Vinnie Reubelt (860) 271-2661	LCDR Anthony Erickson (202) 475-3748

Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

★ Indicates RDC product.

Prototype Hoax Location System Development

Mission Need: Capability to precisely geo-locate Very High Frequency (VHF) marine channel hoax transmissions.

Project Objectives:

- Establish functional requirements for hoax location system.
- Conduct market research, identify, assess, and obtain state of the market Commercial/Government Off the Shelf (COTS/GOTS) geo-locating system(s).
- Develop a prototype geo-locating system.
- Test & evaluate geo-locating systems effectiveness.
- Recommend feasible and cost-effective solutions with potential to precisely geo-locate hoaxers.

Key Milestone / Deliverable Schedule:

Project Start	TBD
Conduct Market Research	TBD+4 Mos.
Develop Demonstration Test Plan	TBD+8 Mos.
Obtain COTS/GOTS Alternative for Demo	TBD+9 Mos.
Develop Prototype Candidate	TBD+10 Mos.
Conduct Demonstration	TBD+11 Mos.
★ **Hoax Location Systems Demonstration Summary Report**	**TBD+16 Mos.**
Project End	TBD+17 Mos.

Sponsor: CG-761
Stakeholder(s): D1 (DT)

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
2013-12	3	Dr. Jack McCready (860) 271-2845	CDR Tung Ly (202) 475-3011

Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:

★ Indicates RDC product.